Filed by:
G. Scott Shepherd, Site Development Specialist II - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - GShepherd@sbasite.com

July 26, 2021

Melanie A. Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Application for Tower Share
134 R Creamery Rd., Durham, CT
Latitude: 41.441352
Longitude: -72.696147
DISH Wireless #: BOBDL00138A

Dear Ms. Bachman:

Please accept this letter as notification pursuant to the Connecticut General Statutes § 16-50aa and R.C.S.A § 16-50j-88 of DISH Wireless' Application for Tower Sharing at the existing 109-foot Monopole Tower at 134 R Creamery Rd., Durham, CT.

- **The new antennas would support 5G services and would be installed at the 86-foot level of the tower.**

Per the requirements under R.C.S.A §16-50j-89 please find the following statements in support of Dish Wireless' Application:

1. Facility and Proposed Modifications

   A. Existing Facility and Appurtenances

   - Initial approval was given for this facility on CSC Docket No. 254 application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 134R Creamery Rd., Durham, CT. The site was also later approved on September 21, 2004 by the Town of Durham's Department of Building and Zoning Permit # 900923 to construct a 130' telecommunications tower. There were no stipulated conditions set forth by Town of Durham planning and Zoning Commission.

   - Latitude / Longitude: 41.441352 / -72.696147
   - Height of Tower: 109'
   - Owned/operated by: SBA Infrastructure, LLC
   - Property Owner: Rising Sun Tower, LLC.
   - Size/Components of existing equipment compound:

- 48’8” x 51’10” fenced compound with 12’ swing gate containing:
  - Monopole [center of compound]
  - Verizon Equipment 12’x30’ Shelter [northeast of monopole w/in compound]
  - Sprint 10’x18’ Equipment Shelter [south of monopole w/in compound]

- Components of existing tower:
  - Verizon:
    - 108’
      - (9) Andrew SBNHH-1D65B - Panel
      - (3) Alcatel Lucent RRH 4x45-AWS
      - (3) Alcatel Lucent RRH2x60-700
      - (3) Alcatel Lucent RRH2X60-PCS
      - (2) Rfs Celwave DB-T1-6Z-8AB-0Z
      - Flush Mount
      - (2) 1-5/8” Fiber
  - Sprint/T-Mobile:
    - 96’
      - (3) Ericsson – AIR32 KRD901146-1_B66A_B2 (Octo) Panel
      - (3) RFS - APXVAALL24-43-U-NA20 - Panel
      - (3) Ericsson - AIR6449 B41 - Panel
      - (3) Ericsson 4415 B25 RRU
      - (3) Ericsson 4449 B71 + B85 RRUs
      - (6) ALU 800 MHz RRH RRU
      - (1) GPS
      - (1) 6’ Side mount
      - (1) ½” coax
  - Town of Durham:
    - 78’ 5” & 71’ 7”
      - 10’x1” Omni
      - 3’6” x 2’6” Dipole
      - (1) Side mount
      - (2) ½” coax

B. Nature and Extent of Proposed Modifications

Dish Wireless proposes to install (3) panel antennas at the 86’ level of the existing 108’-foot Monopole Tower and occupy a ground lease area of 5’x7’ within the existing 48’8” x 51’10” fenced compound. Dish Wireless’ full proposed scope of work is as follows:

Remove: N/A

Remove and Replace: N/A

Install:
Tower:
At 86':

(3) JMA Wireless MX08FRO665-21 Panel
(3) Fujitsu TA08025-B605 RRU
(3) Fujitsu TA08025-B604 RRU
(1) Raycap RDIDC-9181-PF-48 OVP
(1) SitePro1 SNP8HR-3XX Platform w/HRK
(1) 1.4" Hybrid

Ground (within existing compound):

(1) 5'x7' concrete pad
(2) GPS Unit
(3) Power Protective cabinet
(4) Safety Swith space
(5) Dish equipment cabinet
(6) 200 AMP meter socket
(7) Pipe column
(8) Telco Fiber enclosure
(9) Platform
(10) Ground ring
(11) H-Frame
(12) 6'6" l x 12" W Ice Bridge

Existing Equipment to Remain: N/A

C. This Proposal is technically, legally, environmentally, and economically feasible and meets public safety concerns per Connecticut General Statute Section 16-50aa.

Dish Wireless proposes to collocate at the above-referenced existing telecommunication facility rather than to require additional tower construction. Eleven sites in the Durham area as potential tower sites were investigated and all but one were rejected for not meeting coverage objectives along Route 77. The site is on an approximately 67-acre parcel of land, a portion of which has been cleared and used for farming. The tower compound itself is wooded and consists of red cedar, red maple, and black birch. The compound slopes to the southeast. No homes or other structures are presently visible from the tower site. There are four residences within a 100-foot radius of the site, the nearest of which is approximately 908 feet to the northeast at 102 Creamery Rd.

This site will be located within a 10,000 square foot compound area on a 67-acre parcel owned by Rising Sun Tower, LLC. The Tower compound is approximately 50' x 50' area surrounded by a 6-foot chain link fence on the 100-foot lease d parcel and has an elevation of 462 feet above mean sea level. The access road from Creamery Rd to the proposed site would follow an existing driveway on the property for approximately 950-feet and then proceed through fields and wooded areas for approximately another 950-feet. The access road is approximately 12-feet in width.

The proposed collocation meets with all legal and technical requirements. This Application contains all required information and statements per R.C.S.A §16-50j-89 and the proposed installation has been drafted per current code, and studied with regard to structural feasibility and RF emissions output. Drawings and Reports are attached. Dish Wireless' proposed collocation presents no known material changes to environmental conditions from those as documented in the Council's original Findings of Fact and presents no known public safety concerns.

2. Engineering Drawings per the requirements under R.C.S.A. §16-50j-89 are enclosed herewith.

3. Engineering and Structural Analysis per the requirements under R.C.S.A. §16-50j-89 is enclosed herewith.

4. Engineering and Mount Analysis per the requirements under R.C.S.A. §16-50j-89 is enclosed herewith.

5. A Letter from SBA, as Owner of the Facility, agreeing to the proposed shared use of the facility, is enclosed herewith.

6. With regard to any potential environmental impact:

    A. Dish Wireless' collocation will not have any significant adverse visual impact on the surrounding areas. The antennas should result in only marginal additional equipment visibility from areas that already have views of the existing tower. The proposed work would not require any Federal Aviation Administration obstruction marking or lighting.

    B. The proposed collocation does not affect or alter the existing site with regard to wetlands, water resources or air quality. No wetland soils were found on the lease or easement areas. The nearest wetland to the site is approximately 150 feet south of the Lessor's property boundary and approximately 350 feet from the tower compound. National Wetlands Inventory Maps indicated that the site was not within the 100 year floor zone.

    The proposed work is not thought to have any substantial adverse environmental impact. Public Need for the additional coverage outweighs any minor environmental effects that would result from the construction, operation, and maintenance of the proposed collocation.

7. The operation of Dish Wireless' new antennas will not increase the total radio frequency electromagnetic power density at the site to a level at or above the applicable standards. The anticipated Maximum Composite contributions from the Dish Wireless facility are only 11.68% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 17.60% of the allowable FCC established general public limit sampled at the ground level. FCC guidelines state that if a site is to be out of compliance (over allowable thresholds), the carriers over 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were

well within the allowable 100% threshold per the federal government. A Power Density / RF Report per the requirements under R.C.S.A. §16-50j-89 is enclosed herewith.

8. Per the Connecticut Siting Council's COVID 19 Guidelines, one original hard copy of this Tower Share Application is being submitted, along with check in the amount of $625 for the filing fee per Conn. Gen. Stat. §4-189j; Regs., Conn. State Agencies §16-50v-1a.

    A. A copy of this Application and all attachments is being sent to:
        i. The Town of Durham's First Selectman, Laura L. Francis
        ii. The Town of Durham's Zoning Enforcement Officer, Robin Newton
        iii. The Property Owner, Rising Sun Tower, LLC
        iv. (Separate notice is not being sent to tower owner, as it belongs to SBA)

Please note, additionally: the planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a significant change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

Dish Wireless respectfully submits for the Council's review and approval this Application for Tower Share.

Sincerely,

G. Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3804 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbasite.com

Attachments

cc: Laura L. Francis, First Selectman / with attachments
Town of Durham, 30 Townhouse Rd., Durham, CT 06422
Robin Newton, Zoning Enforcement Officer / with attachments
Town of Durham, 30 Townhouse Rd., Durham, CT 06422
Rising Sun Tower, LLC. / with attachments
191 Dasher Circle, Aiken, SC 29803 (SBA address on file)

EXHIBIT LIST

Exhibit 1	Copy of Check	x
Exhibit 2	Letter of Intent to Allow Shared Use of the Existing SBA Telecommunications Site	X
Exhibit 3	Notification Receipts	x
Exhibit 4	Property Card	x
Exhibit 5	Property Map	x
Exhibit 6	Original Zoning Approval	CSC Docket No. 254 (12/3/03); Town of Durham P&Z Permit # 900923 (9/21/04)
Exhibit 7	EME Report	EBI Consulting 7/19/21
Exhibit 8	Structural Analysis	TES 4/28/21
Exhibit 9	Mount Analysis	B+T GRP 5/17/21
Exhibit 10	Construction Drawings	B+T GRP 6/7/21

EXHIBIT 1

Check Copy

EXHIBIT 2
Letter of Intent

July 26, 2021

Melanie A. Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: **134 R Creamery Rd., Durham, CT**
DISH Site No: BOBDL00138A
SBA Site No: CT46140-A

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish Wireless' shared use of the existing SBA telecommunications site at **134 R Creamery Rd., Durham, CT**.

SBA Steel, LLC ("Owner") and DISH Wireless ("Tenant") are entering into a Site Lease Agreement. Tenant will be provided ground space within the existing site compound for its base station equipment and space at the height of 86' for antennas and associated equipment.

Thank you,

Rick Woods
Site Development Manager
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

508.251.0720 x3800 + T
508.366.2610 + F
508.614.0389 + C
rwoods@sbasite.com

EXHIBIT 3

Fedex Labels

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
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Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

FedEx

TRACK ANOTHER SHIPMENT

774391939800

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 10:12 am

DELIVERED
Signature release on file

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods

134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Melanie A. Bachman Exec. Dir
Connecticut Siting Council

Ten Franklin Square
NEW BRITAIN, CT US 06051
508-251-0720

Travel History

TIME ZONE
Local Scan Time

Monday, August 2, 2021

10:12 AM	NEW BRITAIN, CT	Delivered Package delivered to recipient address - release authorized
7:16 AM	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
7:04 AM	WINDSOR LOCKS, CT	At local FedEx facility

Saturday, July 31, 2021

10:14 PM	EAST GRANBY, CT	At destination sort facility
7:03 PM	NEWARK, NJ	Departed FedEx hub
12:43 PM	NEWARK, NJ	In transit
12:17 PM	NEWARK, NJ	Arrived at FedEx hub

Friday, July 30, 2021

8:51 PM	FRAMINGHAM, MA	Left FedEx origin facility

12:24 PM	FRAMINGHAM, MA	Picked up

Thursday, July 29, 2021

9:40 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774391939800

SERVICE
FedEx Priority Overnight

WEIGHT
5 lbs / 2.27 kgs

DIMENSIONS
18x13x3 in.

DELIVERY ATTEMPTS
1

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
5 lbs / 2.27 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Box

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 10:30 am

ACTUAL DELIVERY
8/2/21 at 10:12 am

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FedEx

TRACK ANOTHER SHIPMENT

774391962669

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 10:12 am

DELIVERED
Signature release on file

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OBTAIN PROOF OF DELIVERY

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods

134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Melanie A. Bachman Exec. Dir
Connecticut Siting Council

Ten Franklin Square
NEW BRITAIN, CT US 06051
508-251-0720

Travel History

TIME ZONE
Local Scan Time

Monday, August 2, 2021

10:12 AM	NEW BRITAIN, CT	Delivered Package delivered to recipient address - release authorized
7:15 AM	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
7:03 AM	WINDSOR LOCKS, CT	At local FedEx facility

Saturday, July 31, 2021

10:14 PM	EAST GRANBY, CT	At destination sort facility
7:03 PM	NEWARK, NJ	Departed FedEx hub
12:43 PM	NEWARK, NJ	In transit
12:17 PM	NEWARK, NJ	Arrived at FedEx hub

Friday, July 30, 2021

8:51 PM	FRAMINGHAM, MA	Left FedEx origin facility

12:24 PM	FRAMINGHAM, MA	Picked up

Thursday, July 29, 2021

9:41 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774391962669

SERVICE
FedEx Priority Overnight

WEIGHT
5 lbs / 2.27 kgs

DIMENSIONS
18x13x3 in.

DELIVERY ATTEMPTS
1

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
5 lbs / 2.27 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Box

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 10:30 am

ACTUAL DELIVERY
8/2/21 at 10:12 am

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FedEx

TRACK ANOTHER SHIPMENT

774355742906

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 9:53 am

DELIVERED

Signed for by: H.JACKIE

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

SBA COMMUNICATIONS CORPORATION
Rick Woods

134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO

Laura L. Francis, First Selectman
Town of Durham

30 Townhouse Rd
DURHAM, CT US 06422
508-251-0720

Travel History

TIME ZONE
Local Scan Time

Monday, August 2, 2021

9:53 AM	DURHAM, CT	Delivered
7:51 AM	NORTH HAVEN, CT	On FedEx vehicle for delivery
7:39 AM	NORTH HAVEN, CT	At local FedEx facility

Sunday, August 1, 2021

7:44 PM	EAST GRANBY, CT	At destination sort facility
4:36 PM	MEMPHIS, TN	Departed FedEx hub

Saturday, July 31, 2021

11:09 AM	MEMPHIS, TN	Arrived at FedEx hub

Friday, July 30, 2021

8:35 PM	FRAMINGHAM, MA	Left FedEx origin facility
12:24 PM	FRAMINGHAM, MA	Picked up

Monday, July 26, 2021

11:54 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774355742906

SERVICE
FedEx Priority Overnight

WEIGHT
2 lbs / 0.91 kgs

DELIVERY ATTEMPTS
1

DELIVERED TO
Receptionist/Front Desk

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
2 lbs / 0.91 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 10:30 am

ACTUAL DELIVERY
8/2/21 at 9:53 am

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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FedEx

TRACK ANOTHER SHIPMENT

774355759967

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 9:53 am

DELIVERED

Signed for by: H.JACKIE

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FROM

SBA COMMUNICATIONS CORPORATION
Rick Woods

134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO

Robin Newton, Zone Enf. Officer
Town of Durham

30 Townhouse Rd
DURHAM, CT US 06422
508-251-0720

Travel History

TIME ZONE
Local Scan Time

Monday, August 2, 2021

9:53 AM	DURHAM, CT	Delivered
7:51 AM	NORTH HAVEN, CT	On FedEx vehicle for delivery
7:24 AM	NORTH HAVEN, CT	At local FedEx facility

Sunday, August 1, 2021

7:44 PM	EAST GRANBY, CT	At destination sort facility
4:36 PM	MEMPHIS, TN	Departed FedEx hub

Saturday, July 31, 2021

11:09 AM	MEMPHIS, TN	Arrived at FedEx hub

Friday, July 30, 2021

8:35 PM	FRAMINGHAM, MA	Left FedEx origin facility
12:24 PM	FRAMINGHAM, MA	Picked up

Monday, July 26, 2021

11:55 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774355759967

SERVICE
FedEx Priority Overnight

WEIGHT
2 lbs / 0.91 kgs

DELIVERY ATTEMPTS
1

DELIVERED TO
Receptionist/Front Desk

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
2 lbs / 0.91 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 10:30 am

ACTUAL DELIVERY
8/2/21 at 9:53 am

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FedEx

TRACK ANOTHER SHIPMENT

774355779546

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 10:36 am

DELIVERED

Signed for by: W.LAWSON

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

SBA COMMUNICATIONS CORPORATION
Rick Woods

134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO

Rising Sun Tower, LLC

191 Dasher Circle
AIKEN, SC US 29803
508-251-0720

Travel History

TIME ZONE
Local Scan Time

Monday, August 2, 2021

10:36 AM	AIKEN, SC	Delivered
9:00 AM	AUGUSTA, GA	On FedEx vehicle for delivery
7:41 AM	AUGUSTA, GA	At local FedEx facility

Saturday, July 31, 2021

6:26 AM	WEST COLUMBIA, SC	At destination sort facility
4:15 AM	MEMPHIS, TN	Departed FedEx hub
12:01 AM	MEMPHIS, TN	Arrived at FedEx hub

Friday, July 30, 2021

8:35 PM	FRAMINGHAM, MA	Left FedEx origin facility
12:24 PM	FRAMINGHAM, MA	Picked up

Monday, July 26, 2021

11:56 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774355779546

SERVICE
FedEx Priority Overnight

WEIGHT
2 lbs / 0.91 kgs

DELIVERY ATTEMPTS
1

DELIVERED TO
Residence

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
2 lbs / 0.91 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday, Residential Delivery

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 12:00 pm

ACTUAL DELIVERY
8/2/21 at 10:36 am

EXHIBIT 4

Property Card

Durham, CT : Commercial Property Record Card

[Back to Search Results] [Start a New Search][Help with Printing]

Search For Properties

Parcel ID	Name	Street Name		
l0141901			Search	Reset

Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
L0141901	1	100 030	128R CREAMERY RD	FR	200 - n/a	6.430

Living Units
0

Owner Information
Rising Sun Tower Llc C/O Sprint Spectrum Lp
191 Dasher Circle
Aiken SC 29803

Property Picture
[No Picture Available]

Deed Information

Book/Page:	279/570
Deed Date:	2018/02/26

Building Information

Building No:	0
Year Built:	0
No of Units:	0
Structure Type:	
Grade:	
Identical Units:	0

Valuation

Land:	$236,700
Building:	$64,800
Total:	$231,200
Net Assessment:	$161,840

Sales History

Book/Page	Date	Price	Type	Validity

Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD

Exterior/Interior Information

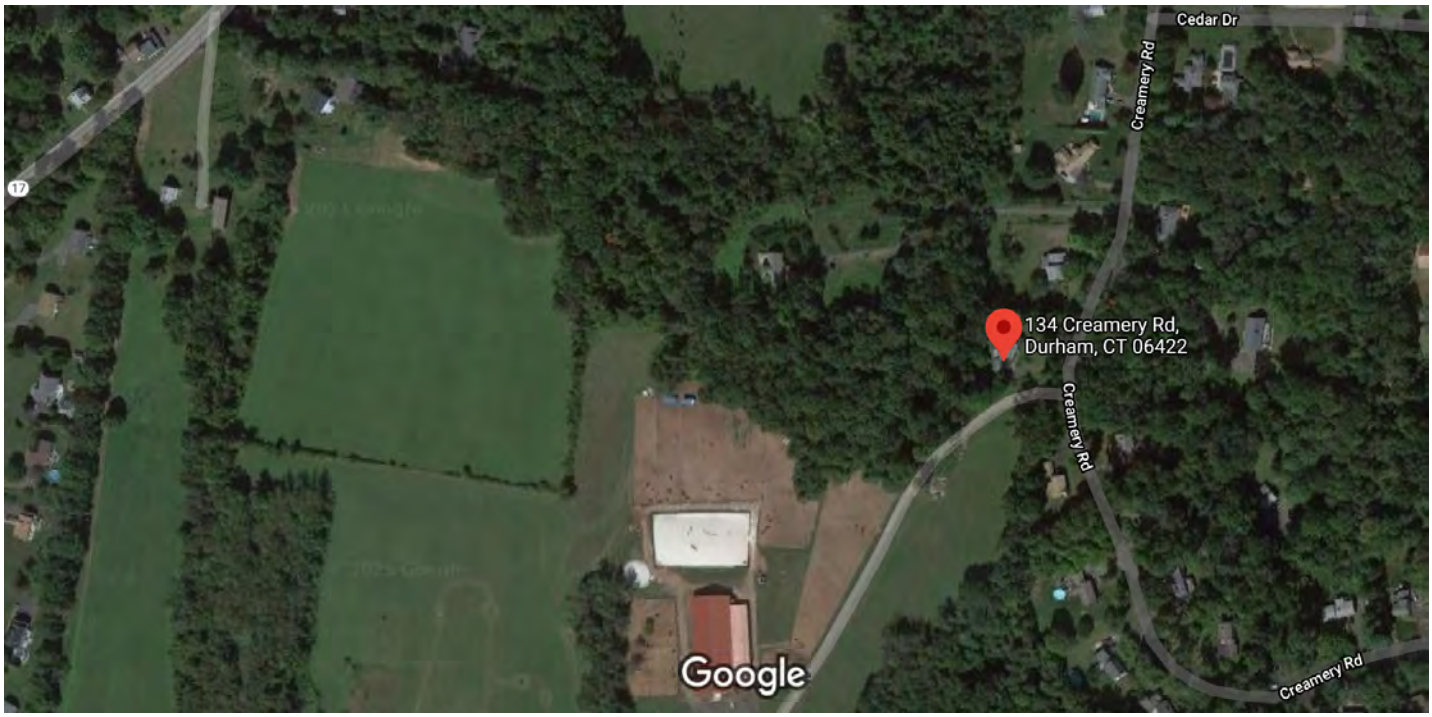
Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func.	Utility	Unadj.	RCNLD

Building Sketch

EXHIBIT 5

Property Map

Google Maps 134 Creamery Rd



Imagery ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 200 ft

EXHIBIT 6

Zoning Approval

CT33xC526

TOWN OF DURHAM

Department of Building and Zoning
30 Town House Road, Durham, CT 06422

Building/Zoning Permit

Date: _____

AFFECTED ADDRESS:

100 (Map #) 30 (Lot #) *34R (Street #) CREAMERY ROAD (Street Name)

Owner: SPRINT PCS
Address: 1 INTERNATIONAL BLVD SUITE 800 MAHWAH N.J. 07495
Phone: (201) 684-4000

Applicant STEVEN FLORIO
Address: 21 WINDMILL ROAD, HARWINTON CT.
Phone: (860) 485-0361 Cell: 860-655-7943
License # 300923 Exp 6/30/05

Zoning Application

Application for: _____

Approval Dates:
PZC _____
ZBA _____
IWWCA _____
Historic Dist. _____

Is proposed work in flood plain? If yes,
Base Flood Elevation _____
Lowest Flood Elevation _____

Setbacks to property lines
Front _____ Rear _____
Side _____ Side _____

Attach lot map or sketch below with dimensions:

See attached site plan w/ Siting Council filing

Per Siting Council - revised buffer plan to follow.

Building Application

Description of Work: CONSTRUCT 100' SPRINT PCS TOWER.
Estimated Structure Cost: 152,500.00
Electric Ltr.
Plumbing —
Heating/Cooling —
Total Cost $ _____

Type of Construction:
New X
Addition _____
Accessory _____
Demolition _____
Pool: _____
Remodeling: _____

Building Description:
Length NONE.
Width _____
Height _____

Square Footage:
1st Floor _____ Basement _____
2nd Floor _____ Garage _____
3rd Floor _____ Total _____

FOR DEPARTMENT USE:
Permit Fee $ 1520.00
State Fee $ 24.32
Total Permit Fee $ $1544.32
Permit # 05-73

I hereby certify that I am the owner or agent for owner of the above referenced property. I authorize access to the property referenced for the purpose of inspections. By signing this permit, it is agreed that all laws and regulations will be conformed to. All information contained within is true and accurate to the best of my knowledge and belief.

Signature of Applicant: _____

N/A		R. McMANUS	9-21-04
Zoning Enforcement Officer	Date	Building Official	Date

CT33XC526

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

December 12, 2003

Thomas J. Regan, Esq.
Brown Rudnick Berlack Israels LLP
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402

RE: **DOCKET NO. 254** - Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 134R Creamery Road, Durham, Connecticut.

Dear Attorney Regan:

By its Decision and Order dated December 9, 2003, the Connecticut Siting Council (Council) granted a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a wireless telecommunications facility at 134R Creamery Road, Durham, Connecticut.

Enclosed are the Council's Certificate, Findings of Fact, Opinion, and Decision and Order.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/laf

Enclosures (4)

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.ct.gov/csc

CERTIFICATE

OF

ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED

DOCKET NO. 254

Pursuant to General Statutes § 16-50k, as amended, the Connecticut Siting Council hereby issues a Certificate of Environmental Compatibility and Public Need to Sprint Spectrum, L.P. d/b/a Sprint PCS for the construction, maintenance and operation of a wireless telecommunications facility at 134R Creamery Road, Durham, Connecticut. This Certificate is issued in accordance with and subject to the terms and conditions set forth in the Decision and Order of the Council on December 9, 2003.

By order of the Council,

Pamela B. Katz, P.E., Chairman

December 9, 2003

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

December 12, 2003

TO: Parties and Intervenors

FROM: S. Derek Phelps, Executive Director

RE: **DOCKET NO. 254** - Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 134R Creamery Road, Durham, Connecticut.

By its Decision and Order dated December 9, 2003, the Connecticut Siting Council granted a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a wireless telecommunications facility at 134R Creamery Road, Durham, Connecticut.

Enclosed are the Council's Findings of Fact, Opinion, and Decision and Order.

SDP/laf

Enclosures (3)

c: State Documents Librarian

DOCKET NO. 254 - Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 134R Creamery Road, Durham, Connecticut.	}	Connecticut
	}	Siting
	}	Council

December 9, 2003

Findings of Fact

Introduction

1. On April 22, 2003, Sprint Spectrum L.P., d/b/a Sprint PCS (Sprint) applied to the Connecticut Siting Council (Council) for the construction, operation and maintenance of a 130-foot telecommunications tower at 134R Creamery Road, Durham, Connecticut. (Sprint 1, p. 1)

2. Sprint is a Delaware limited partnership, a wholly owned subsidiary of Sprint Corporation, a Kansas corporation. Sprint Corporation is a wholly owned subsidiary of Wireless Co., L.P., a Delaware limited partnership. Sprint is licensed by the Federal Communications Commission (FCC) in thirty-two major United States trading areas, including Connecticut and the Town of Durham. (Sprint 1, p. 1)

3. The primary purpose of the proposed facility is to provide wireless service to coverage gaps Sprint has identified on State Routes 17 and 77 in Durham, as part of Sprint's network build-out in Connecticut. (Tr. 1, p.56; Tr. 2, p. 8; Sprint 1, p. 4, p. 5)

4. Pursuant to Connecticut General Statutes (CGS) §§ 16-50m, the Council, after giving due notice thereof, held a public hearing on August 18, 2003, beginning at 3:00 p.m. and continued at 7:00 p.m. in the Lower Level Conference Room of the Durham Public Library, 7 Maple Avenue, Durham, Connecticut. (Transcript, 8/13/03, p. 3; [Tr. 1]; Transcript, 8/13/03, 7:00 p.m., p. 3 [Tr. 2])

5. The Council and its staff made an inspection of the proposed site on August 18, 2003. During the field inspection, the applicant flew a red weather balloon measuring approximately four feet in diameter at a height of 130 feet above ground level (agl) to simulate the height of the proposed tower. The balloon flew from approximately 12:30 p.m. to 7:00 p.m. (Tr. 1, p. 30)

6. Sprint provided notice of the application to the Council to all abutters of the proposed site via certified mail. All return receipts of the abutters were received except for one. Another copy of the notice was sent by first class mail to this abutter with no return receipt requested. (Sprint 1, p. 3; Sprint 2, PHQ. 1)

7. The party in this proceeding is the applicant. The intervenor is Tower Ventures II, LLC. (Tr. 1, pp. 5-6)

8. Pursuant to General Statutes 16-50j(h), the following state agencies were requested to submit written comments regarding the proposed facility on May 27, 2003: the Department of Environmental Protection (DEP); Department of Public Health (DPH); Council on

Environmental Quality (CEQ); Department of Public Utility Control (DPUC); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); and the Department of Transportation (DOT). (Record)

9. Comments were received from the DOT dated June 2, 2003, and from the DEP dated August 13, 2003. (Record)

10. The following agencies did not offer comments on the application: DPH, CEQ, DPUC, OPM and the DECD. (Record)

11. Public Notice of the application was published in The Town Times on January 31, 2003, and in The Hartford Courant, and The Middletown Press on January 28 and 30, 2003. (Sprint 1, p.3 Tab 2)

Municipal Consultation

12. In accordance with CGS §§ 16-50l(e), Sprint notified the First Selectman of the Town of Durham on November 8, 2002, of its intention to file this application with the Council. The Town Planner of the Town of Durham was also notified. Previously, Sprint had filed an application for a special permit with the Durham Planning and Zoning Commission on June 7, 2000, for a 150-foot tower at the proposed site. The Durham Planning and Zoning Commission held public hearings on this application on July 5, August 2, and September 6, 2000. On November 15, 2000, the Durham Planning and Zoning Commission denied Sprint's application. (Sprint 1, p. 6)

13. On February 5, 2003, the Durham Planning and Zoning Commission voted to recommend denial of this application to the Council. (Sprint 1, Tab 8, Legal Notice, 2/08/03)

14. The First Selectman of the Town of Durham, Maryann Boord, stated the Town's opposition to the proposed tower site at the hearing on August 13, 2003. (Tr. 2, p . 9)

Need

15. In 1996 the Congress of the United States recognized a nationwide need for high quality wireless telecommunications services. Through the Federal Telecommunications Act of 1996 (the Act), Congress seeks to promote competition, reduce regulation to encourage technical innovation and foster lower prices for wireless telecommunications services. The Act pre-empts any state or local determination of public need. (Telecommunications Act of 1996)

16. The Telecommunications Act of 1996, a Federal law passed by the United States Congress, prohibits any state or local agency from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions. This Act also blocks the Council from prohibiting or acting with the effect of prohibiting the provision of personal wireless service. (Telecommunications Act of 1996)

17. The Telecommunications Act of 1996 prohibits local and state bodies from discriminating among providers of functionally equivalent services. (Telecommunications Act of 1996)

Site Search

18. Sprint currently experiences coverage gaps in the Durham area along Route 79 for approximately 0.55 miles, along Route 17 for approximately 1.98 miles, and along Route 77 for approximately 1.49 miles. (Sprint 3, PHQ. 17)

19. Sprint identified two search rings in the area between Route 17 and 77 to locate sufficiently tall buildings, towers or other structures to meet its coverage needs. Sprint identified no existing structures in the vicinity of its search rings to meet its coverage objectives. (Sprint 1, p. 8)

20. Sprint investigated eleven sites in the Durham area as potential tower sites and rejected ten of them as not meeting coverage objectives along Route 77; the remaining site became the proposed site on Creamery Road. The other rejected sites were off of Guilford Street (4 sites); 152 R Creamery Road; 500 R New Haven Road; Wilmer property; 553 Guilford Street; 7 Main Street; and 108 Mica Hill Road. (Sprint 1, p. 9)

The Proposed Site

21. The proposed site is located on an approximately 67-acre parcel of land owned by William W. Lawson, Jr. at 134R Creamery Road, Durham. A portion of this property has been cleared and is used for farming. The area of the proposed tower site itself is wooded and consists of red cedar, red maple, and black birch. The compound site slopes gradually to the southeast. (Sprint 1, p. 10; DEP comments 8/13/03)

22. The proposed site is zoned Farm Residential and includes a residence, outbuildings, and a horse barn. No homes or other structures are presently visible from the proposed tower site. There are 4 residences within a 1000-foot radius of the proposed site, the nearest of which is approximately 908 feet to the northeast at 102 Creamery Road, owned by Karen Fiske. (DEP comments, 8/13/03; Sprint 1, Tab 5, Site Plans; Sprint 3, PHQ 14, Abutters Map; Sprint 1, p. 17)

23. No wetland soils were found on the lease or easement areas. The nearest wetland to the proposed site is approximately 150 feet south of the lessor's property boundary and approximately 350 feet from the tower compound. (Sprint 1, Tab 5, Sheet C-2; Sprint 1, p. 15, p. 19)

24. The tower compound would be a 50-foot by 50-foot area surrounded by a 6-foot chain link fence on the 100-foot by 100-foot leased parcel. The proposed site has an elevation of 462 feet above mean sea level (amsl). Blasting is not expected to be needed to build the site. (Sprint 1, Tab5, Sheet C-3; Tr. 2, p. 8; Sprint 2, PHQ. 11)

25. The access road from Creamery Road to the proposed site would follow an existing driveway on the Lawson property for approximately 950 feet, and then proceed through fields and wooded areas for approximately another 930 feet. The access road would be approximately 12 feet in width. (Tr. 2, p. 8; Sprint 1, Tab 5, Sheet C-3)

26. To construct the proposed site, an estimated 25 trees greater than 6 inches in diameter would have to be removed for the construction of the tower compound, and an estimated 37 trees greater than 6 inches in diameter would be removed for the construction of the access road. (Sprint 3, PHQ. 14, Abutters Map)

27. Utilities would be brought into the proposed site underground following a parallel route to an existing electric line. Single-phase electric power would be used. (Tr. 1, pp. 76-77; Sprint 1, Tab 5, Existing Conditions Map)

Estimated Costs

28. The estimated costs to construct the proposed site are shown as follows:

Site Work	$10,000.
Tower	90,000.
Electrical and Telephone	45,000.
Foundation	36,000.
Compound	8,000.
Road	45,500.
Radio-frequency Work	25,000.
Total	$259,500.

(Sprint 1, Tab 13)

Environmental Considerations

29. There are no known existing populations of state endangered, threatened, or special concern species at the proposed site. (Sprint 2, PHQ. 9, DEP Letter of 2/06/03)

30. A Professional Reconnaissance Survey was conducted of the proposed site to identify and evaluate archaeological resources in the proposed project area, and no significant archaeological resources were encountered during this survey. The proposed tower facility would have no effect on historic, architectural or archeological resources listed on or eligible for the National Register of Historic Places. (Sprint 1, Tab 18, Connecticut Historic Commission letter of 7/01/02)

31. Route 77 in Durham is a State Scenic Road from the center of Durham into Guilford, a distance of about 2.3 miles. Route 17 is a State Scenic Road from approximately the intersection with Route 77 north to the intersection with Route 147. The Town of Durham has acquired the development rights to approximately 200 acres of ridgeline west of Route 77 and immediately south of the proposed site. (Tr. 1, pp. 42-45; Sprint 1, Tab 15, Visibility Map, Tr. 2 p. 34, p. 49; State Tourism Map, 2002-2003)

32. The proposed site is mapped as a Locally High Area on the DEP Ridgelines and Summit Protection Policy Areas map. The site is not on a statutorily zoned ridgeline or an area greater than 20 percent out slope. (DEP comments, 8/13/03)

33. The proposed 130-foot tower would not require marking or lighting under Federal Aviation Administration regulations. (Sprint 1, Tab 17)

34. Based on conservative assumptions, including the main beam of the antennas pointing directly toward the ground at the base of the tower, the worst case radio-frequency power density concludes the proposed Sprint antennas would result in a maximum permissible exposure level of approximately 7.7 percent at the base of the proposed tower, based on FCC Bulletin 65. (Sprint 1, p.20, Tab 17)

Visibility

35. Due to topography and surrounding vegetation, the proposed tower is not expected to be visible from Creamery Road. The tower may be visible during winter months from Park Place, which is off of Creamery Road and from Ridge Road North off Creamery Road at approximately 2000 feet. Limited views are expected from David Road, which is west of the site, off of Parmelee Hill Road. Some visibility is expected from Clark Road at a distance of approximately 1.5 miles. (Tr. 1, pp. 31-34, Sprint 1, Tab 15, Visibility Map, DEP Comments, 8/13/03; Sprint 2, PHQ. 7)

36. The proposed tower would be most significantly visible from roads and residences east of Route 77 on the westward-facing hillside across the valley from the proposed site, at a distance of approximately 2500 to 3000 feet in an area known as Crooked Hill. (DEP Comments, 8/13/03, Sprint 1, Tab 15, Visibility Map)

37. The area of Crooked Hill would have an unobstructed view of the ridgeline on which the proposed tower would be constructed, including views from Mica Hill Road, Banta Lane, and Surrey Drive. The existing Totoket Mountain tower in Guilford is also visible from this area. (Tr. 1, pp. 35-39. P.41)

38. The proposed tower would be visible year round from approximately 0.6 miles of total roadway along Route 77. There would be more limited visibility from Route 17, with some visibility expected in the area of the intersection of Route 17 and Route 77, at a distance of over 1.5 miles. (Sprint 1, Tab 15, Visibility Map; Tr. 1, pp. 35-37, Sprint 1, Tab 15, Photograph No. 11)

39. Seasonal visibility of the proposed tower is possible from the Mattabesset Trail at a distance of approximately one mile at its nearest section. (Tr. 1, pp. 41-42; Sprint 1, Tab 15, Visibility Map)

40. Sprint has proposed a stealth design for this tower in the form of a pine tree and visual simulations were based on this design. The pine tree-design tower would be approximately twice as tall as the other trees in the deciduous forest surrounding the proposed tower site, and would create a larger profile on the skyline from a distance. Sprint would also be willing to construct another type of tower at this site, including a brown stick or flush-mount, which is a bare pole without a full antenna array. A white flagpole or standard monopole would also be functional, but a brown stick with close-contact arrays would provide the least intrusive pattern on the skyline. (DEP Comments, 8/13/03; Sprint 1, Tab 15, Photo simulations; Tr. 1, pp. 82-84, p.87)

Wireless Telecommunications Coverage

41. Sprint has a minimum standard coverage level of -94 dBm for rural areas and -79 to -84 dBm for urban areas. (Sprint 1, p. 12, Tr. 1, pp. 67-68)

42. The proposed site would provide coverage to fill existing Sprint coverage gaps along Route 17 and Route 77. The extensive range of these gaps along these roads and their distance from each other could otherwise require the use of multiple towers. (DEP Comments, 8/13/03, Sprint 1, Tab 14, Coverage without proposed candidate map)

43. Sprint currently has antennas on three of the towers in the Durham area which would interact with the proposed Creamery Road tower: at the 87-foot level of the existing Verizon tower on Old Blue Hill Road in Durham; at the 135-foot level of the existing Apple Orchard tower in North Branford; and at the 162-foot level of an existing tower on Durham Road in Wallingford. Sprint expects to place future antennas at the 150-foot level of the North Madison Fishing Association tower and at 150-foot level of the North Guilford Sportsman Club tower. (Sprint 2, PHQ 12, Sprint 1, Tab 14, Coverage Map; Tr. 1, pp. 93-94)

44. Sprint has offered to provide space for Town of Durham antennas on the proposed tower free of charge. The Town would be interested in two antenna positions at or near the top of the tower for municipal use. (Sprint 2, PHQ. 5; Town of Durham letter of September 11, 2003)

45. No carriers other than Sprint have expressed interest in sharing the proposed Durham tower. (Sprint 2, PHQ. 6)

46. Sprint has a goal of less than a one- percent dropped call rate. Currently, Sprint is experiencing the following dropped call rates: 70 dropped calls at 4 percent at the Old Blue Hills Road (BAM) tower in Durham and 10 dropped calls at 2.5 percent at the Route 68 tower in Wallingford. (Sprint 1, Tab 14 Coverage Map; Sprint 2, PHQ. 4; Tr. 1, p. 60)

47. The proposed tower would have E-911 capabilities. (Sprint 3, PHQ. 16)

48. Sprint is currently experiencing the following coverage gaps on state routes in the Durham area as shown below.

Road	Existing Gap (miles)	Total Miles
Route 79	.55	2.2
Route 17	1.98	3.9
Route 77	1.49	2.4
Route 68	**.14**	**2.9**

(Sprint 3, PHQ. 17) (See Appendix A)

49. Placing Sprint antennas at the 130-foot or 100-foot levels of the proposed Durham tower would leave the following coverage gaps:

Road	Gap at 130ft. (miles)	Gap at 100ft. (miles)
Route 79	.55	.55
Route 17	.30	.37
Route 77	0.00	.02
Route 68	**0.00**	**.04**

(Sprint 3, PHQ. 17) (See Appendices B and C)

50. Sprint use of the proposed Tower Ventures Docket No. 237 proposed site at 853R New Haven Road (The Raccoon Club) or at the proposed alternate sites at the same location would provide no additional coverage to Route 68, Route 77, or Route 79 with Sprint antennas at 130 feet agl. The site would provide Sprint with some coverage on Route 17, but would not provide Sprint coverage to most of Durham. (Tr. 1, pp. 71-72; Sprint 4, PHQ. 25, Coverage Maps Site 1 at 130 feet, Site 2 at 130 feet) (See Appendix D)

51. Attaching Sprint antennas at 140 feet agl at the proposed Tower Ventures site would still leave Sprint with gaps along Route 77, Route 68, and the Tri Mountain Road area. A significant hill blocks Sprint coverage to Route 68 along the Durham-Wallingford border. (Tr. 1, pp.56-57; Sprint7, Responses to TV PHQ. 3a; Coverage Map) (Appendix E)

52. Combining the Tower Ventures site with Sprint antennas at 140 feet agl on the proposed Tower Ventures tower with Sprint antennas mounted on the existing Totoket Mountain tower at 500 Cooks Lane, Guilford, at 160 feet agl would provide some Sprint coverage to Route 17 in southern portions of Durham. However, it would leave gaps along Route 17 to the north near Meeting House Hill Road. A gap would remain along Route 77 east of Totoket Mountain and along Route 77 east of the proposed Tower Ventures site. (Tr. 1 pp. 108-110; Sprint 7, Responses to TV PHQ. 3b, Coverage Map) (See Appendix F)

53. Sprint evaluated the Totoket Mountain tower, but found this tower is very heavily used and available space is uncertain. Sprint would not be able to install all of its antennas at the same level, raising antenna orientation concerns, and inter-modulation concerns. Two small obsolete antennas may be removed at 80 feet agl and 130 feet agl. The Totoket Mountain tower is 1.98 miles south of the proposed Sprint site. (Tr. 1, pp. 110-111; Tr. 2 p. 39; Appendix F)

54. The proposed tower would be designed and constructed in accordance with the American National Standards Institutes/Electronics Industries Association Manual 222, Revision F, Structural Standards. The tower would be designed to accommodate two additional carriers, and would also have a global positioning system antenna at 75 feet agl on the southwest side of the tower. (Sprint 1, p.11)

55. Use of repeater antennas at Route 77 and Route 68 would not provide adequate coverage for the Sprint gaps now existing on these roads. (Tr. 2, p. 44-45)

56. In comparison with the proposed Tower Ventures site, the Sprint site on Creamery Road, which is between Routes 17 and 77, would provide coverage to both Route 17 and 77, while the proposed Tower Ventures site, which is near Route 17, would primarily cover Route 17, but not Route 77, due to an intervening ridge between the Raccoon Club site and Route 77. (Tr. 2, pp. 56-57, AT&T 1, Tab 7, Coverage Map of AT&T; Sprint Coverage Map at 130 feet in Sprint 2, PHQ. 2)

EXHIBIT 7

EME Report

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

Dish Wireless Existing Facility

Site ID: BOBDL00138A

128 R Creamery Road
Durham, Connecticut 06422

July 19, 2021

EBI Project Number: 6221003196

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**36.04%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

July 19, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00138A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **128 R Creamery Road** in **Durham, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 128 R Creamery Road in Durham, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative

estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) 0 This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antenna mounting height centerline of the proposed antennas is 86 feet above ground level (AGL).

8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

9) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	86 feet	Height (AGL):	86 feet	Height (AGL):	86 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna A1 MPE %:	**3.70%**	Antenna B1 MPE %:	**3.70%**	Antenna C1 MPE %:	**3.70%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	3.70%
T-Mobile	29.04%
Verizon	3.3%
Site Total MPE % :	36.04%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	3.70%
Dish Wireless Sector B Total:	3.70%
Dish Wireless Sector C Total:	3.70%
Site Total MPE % :	36.04%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	1667.71	86.0	37.47	600 MHz n71	400	9.37%
Dish Wireless 1900 MHz n70	4	7363.09	86.0	165.45	1900 MHz n70	1000	16.54%
Dish Wireless 2190 MHz n66	4	7363.09	86.0	165.45	2190 MHz n66	1000	16.54%
						Total:	**3.70%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the Dish Wireless facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Dish Wireless Sector	Power Density Value (%)
Sector A:	3.70%
Sector B:	3.70%
Sector C:	3.70%
Dish Wireless Maximum MPE % (Sector A):	3.70%
Site Total:	36.04%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **36.04%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

EXHIBIT 8

Structural Analysis

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 109 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46140-A

Customer Site Name: S. Durham-rt 17/ Lawson

Carrier Name: Dish Wireless (App#: 153564, V2)

Carrier Site ID / Name: BOBDL00138A / 0

Site Location: 134 R Creamery Road

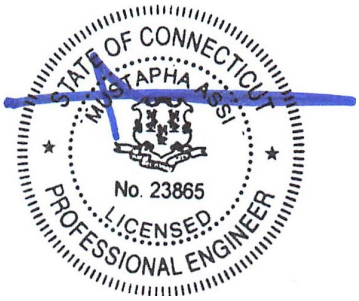
Durham, Connecticut

MIDDLESEX County

Latitude: 41.441352

Longitude: -72.696147

Exp.10/31/2021



04/28/2021

Analysis Result:

Max Structural Usage: 58.5% [Pass]

Max Foundation Usage: 36.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Delu Zhou

Introduction

The purpose of this report is to summarize the analysis results on the 109 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Engineered Endeavors, Inc. (Job No. 12807-E01 Rev. 1) Structure Design Calculations dated August 4, 2004
Foundation Drawing	Engineered Endeavors, Inc. (Project No. 12807) Foundation Design Calculations dated July 28, 2004
Geotechnical Report	Clarence Welti Assoc., Inc. (Project Name Sprint Site-CT33XC526) Geotechnical Study dated October 25, 2000
Modification Drawings	FDH, Project # 13TFSP1400, Dated 12/27/2013
Mount Analysis	N/A

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 126.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 98.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.179, S_1 = 0.062

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	108.0	9	Andrew SBNHH-1D65B - Panel	Flush Mount	(2) 1 5/8" Fiber	Verizon
2		3	Alcatel Lucent RRH 4x45-AWS			
3		3	Alcatel Lucent RRH2x60-700			
4		3	Alcatel Lucent RRH2X60-PCS			
5		2	Rfs Celwave DB-T1-6Z-8AB-0Z			
6	96.0	3	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo) - Panel	SitePro ULPD12-472	(3) 2" Hybrid	T-Mobile Sprint
7		3	RFS - APXVAALL24-43-U-NA20 - Panel			
8		3	Ericsson - AIR6449 B41 - Panel			
9		3	Ericsson 4415 B25 RRU			
10		3	Ericsson 4449 B71 + B85 RRUs			
11		6	ALU 800 MHz RRH RRU			
16	76.0	1	GPS	(1) 6' Side Mount	(1) 1/2"	
17	78.5	1	10'x1" Omni	(1) Side Mount	(2) 1/2"	Town of Durham
18	71.7	1	3'6" x 2'6" Dipole			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
12	86.0	3	JMA Wireless MX08FRO665-21 Panel	Sitepro1 SNP8HR-3XX Platform w/HRK	(1) 1.4" Hybrid	Dish Wireless
13		3	Fujitsu TA08025-B605 RRU			
14		3	Fujitsu TA08025-B604 RRU			
15		1	Raycap RDIDC-9181-PF-48 OVP			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**54.3%**	**50.7%**	**58.5%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2010.6	25.2	47.1

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.4820 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

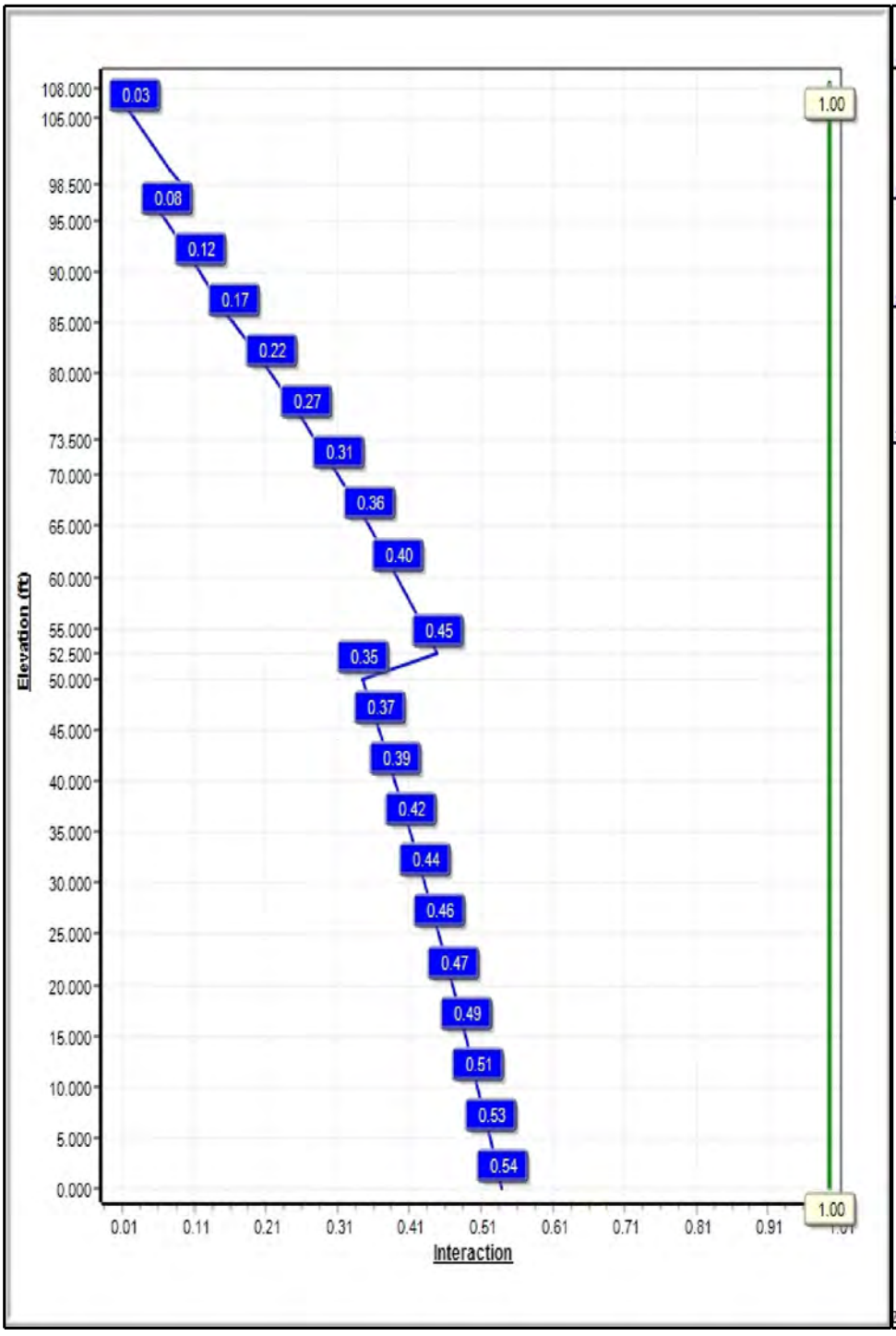
Usage Diagram - Max Ratio 54.33% at 0.0ft

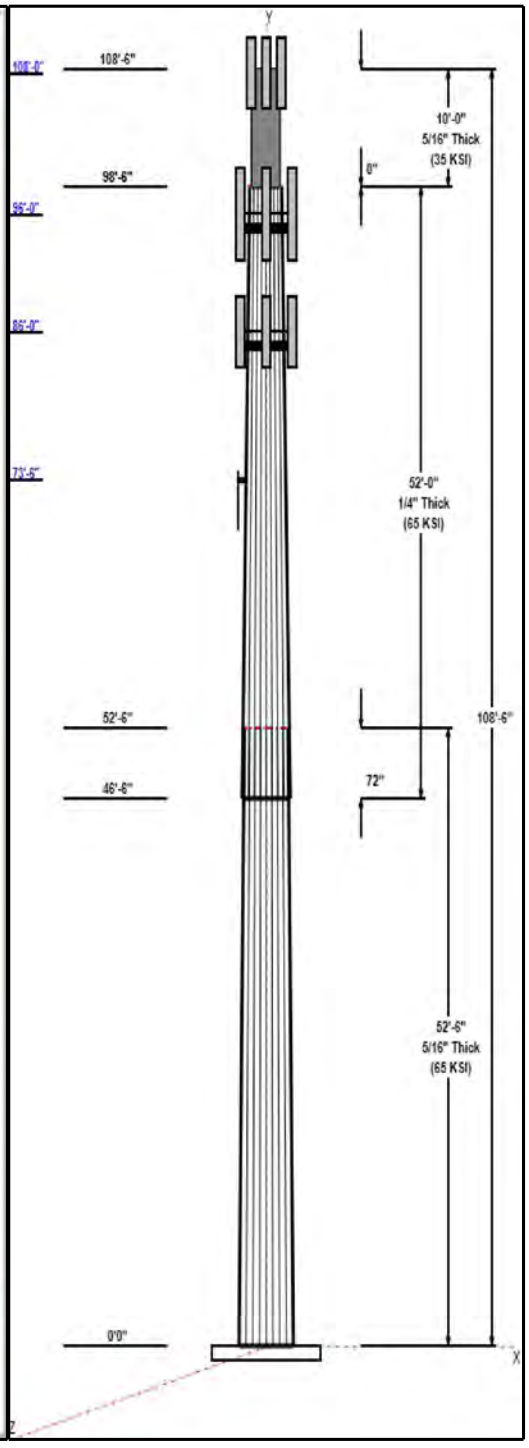
Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C	
Height:	108.50 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	19
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 98 mph Wind





Structure: CT46140-A-SBA

Type: Custom
Site Name: S. Durham-rt 17/ Lawson
Height: 108.50 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.25659

4/28/2021

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.50	42.53	56.00	0.313		0.25659	65
2	52.00	31.23	44.57	0.250	Slip	0.25659	65
3	10.00	28.00	28.00	0.312	Butt	0.00000	35

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
108.50	108.50	1	Lightning Rod	
108.00	108.00	9	SBNHH-1D65B	Verizon
108.00	108.00	3	RRH2x60-700	Verizon
108.00	108.00	3	RRH2X60-PCS	Verizon
108.00	108.00	2	DB-T1-6Z-8AB-0Z	Verizon
108.00	108.00	1	Flush Mount	Verizon
108.00	108.00	3	RRH 4x45-AWS	Verizon
96.00	96.00	3	AIR32	T-Mobile Sprint
96.00	96.00	3	APXVAALL24-43-U-NA20	T-Mobile Sprint
96.00	96.00	3	AIR6449 B41	T-Mobile Sprint
96.00	96.00	3	Ericsson 4415 B25 RRU	T-Mobile Sprint
96.00	96.00	3	Ericsson 4449 B71 + B85	T-Mobile Sprint
96.00	96.00	6	ALU 800 MHz RRH RRU	T-Mobile Sprint
96.00	96.00	1	ULPD12-472	T-Mobile Sprint
86.00	86.00	3	MX08FRO665-21	Dish Wireless
86.00	86.00	1	SNP8HR-3XX	Dish Wireless
86.00	86.00	3	TA08025-B605	Dish Wireless
86.00	86.00	3	TA08025-B604	Dish Wireless
86.00	86.00	1	RDIDC-9181-PF-48	Dish Wireless
73.50	78.50	1	10' x1" Omni	Town of Durham
73.50	71.70	1	3'6" x 2'6" Dipole	Town of Durham
73.50	73.50	1	Sidearm	Town of Durham

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	108.00	Inside	1 5/8" Fiber	Verizon
0.00	96.60	Inside	2" Hybrid	T-Mobile Sprint
0.00	86.00	Inside	1.4" Hybrid	Dish Wireless
0.00	73.50	Inside	1/2" Coax	Town of Durham

Anchor Bolts

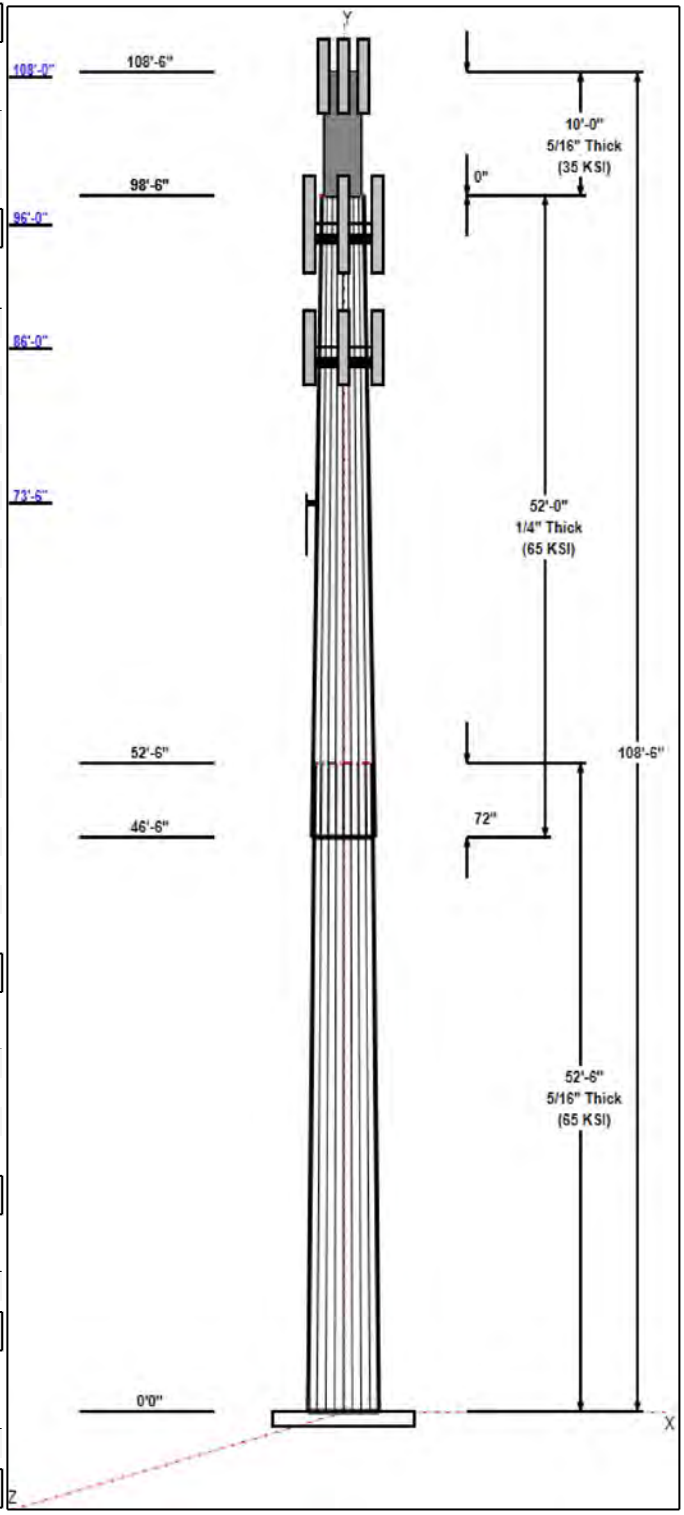
Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	71.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 98 mph Wind	2010.6	25.2	28.0
0.9D + 1.6W 98 mph Wind	2002.5	25.2	21.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind	537.0	7.0	47.1



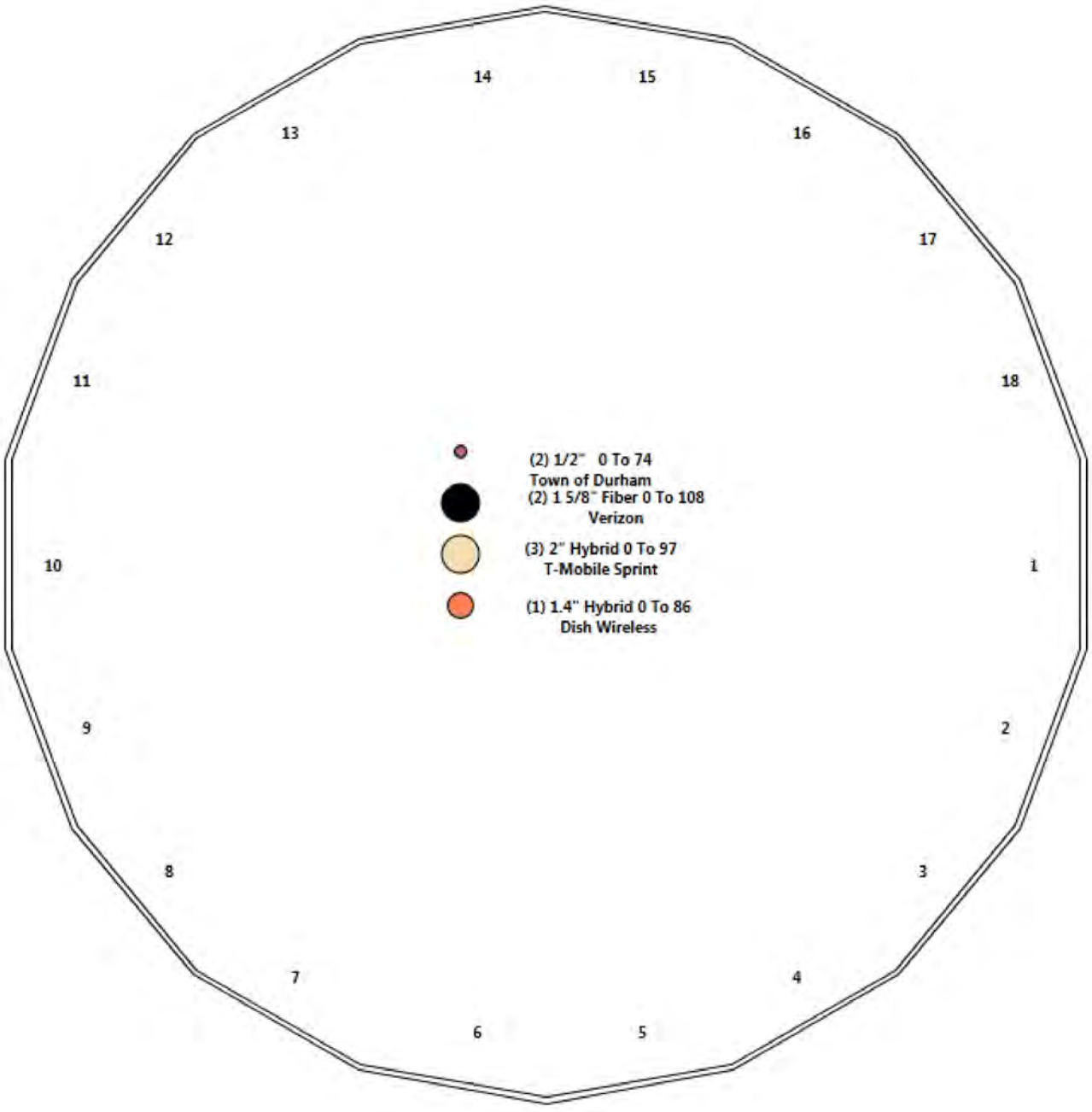
1.2D + 1.0E	66.4	0.8	28.1
0.9D + 1.0E	66.1	0.8	21.0
1.0D + 1.0W 60 mph Wind	469.9	5.9	23.4

Structure: CT46140-A-SBA - Coax Line Placement

Type: Monopole
Site Name: S. Durham-rt 17/ Lawson
Height: 108.50 (ft)

4/28/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT46140-A-SBA		**Code:**	EIA/TIA-222-G	4/28/2021
Site Name:	S. Durham-rt 17/ Lawson		**Exposure:**	C	
Height:	108.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	52.500	0.3125	65		0.00	8,674
2	18	52.000	0.2500	65	Slip	72.00	5,286
3	R	10.000	0.3120	35	Flange	0.00	923
					Total Shaft Weight:		**14,883**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	56.00	0.00	55.23	21640.51	30.19	179.20	42.53	52.50	41.87	9428.49	22.59	136.0	0.256590
2	44.57	46.50	35.17	8726.53	30.02	178.27	31.23	98.50	24.58	2979.59	20.61	124.9	0.256590
3	28.00	98.50	27.14	2602.69	0.00	89.74	28.00	108.50	27.14	2602.69	0.00	89.74	0.000000

Load Summary

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	108.50	Lightning Rod	1	5.00	0.50	1.00	25.28	2.190	1.00	0.00	0.00
2	108.00	SBNHH-1D65B	9	40.00	8.16	0.83	235.35	9.415	0.83	0.00	0.00
3	108.00	RRH2x60-700	3	60.00	3.50	0.76	144.47	4.264	0.76	0.00	0.00
4	108.00	RRH2X60-PCS	3	55.00	2.20	0.89	136.18	2.814	0.89	0.00	0.00
5	108.00	DB-T1-6Z-8AB-0Z	2	18.90	4.80	0.90	157.18	5.644	0.90	0.00	0.00
6	108.00	Flush Mount	1	350.00	5.00	1.00	633.72	8.378	1.00	0.00	0.00
7	108.00	RRH 4x45-AWS	3	60.00	2.77	0.99	140.74	3.998	0.99	0.00	0.00
8	96.00	AIR32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	307.12	7.638	0.87	0.00	0.00
9	96.00	APXVAALL24-43-U-NA20	3	122.80	20.24	0.73	529.61	22.054	0.73	0.00	0.00
10	96.00	AIR6449 B41	3	103.00	5.65	0.71	234.13	6.559	0.71	0.00	0.00
11	96.00	Ericsson 4415 B25 RRU	3	46.30	1.86	0.67	103.71	2.397	0.67	0.00	0.00
12	96.00	Ericsson 4449 B71 + B85 RRUs	3	73.20	1.97	0.67	128.42	2.514	0.67	0.00	0.00
13	96.00	ALU 800 MHz RRH RRU	6	53.00	2.49	0.67	123.73	3.584	0.67	0.00	0.00
14	96.00	ULPD12-472	1	2331.00	40.30	1.00	5443.43	80.657	1.00	0.00	0.00
15	86.00	MX08FRO665-21	3	64.50	12.49	0.74	339.63	13.876	0.74	0.00	0.00
16	86.00	SNP8HR-3XX	1	1876.00	39.73	1.00	3734.12	86.941	1.00	0.00	0.00
17	86.00	TA08025-B605	3	75.00	1.96	0.67	124.47	2.491	0.67	0.00	0.00
18	86.00	TA08025-B604	3	63.90	1.96	0.67	111.79	2.491	0.67	0.00	0.00
19	86.00	RDIDC-9181-PF-48	1	21.85	2.01	1.00	72.10	2.547	1.00	0.00	0.00
20	73.50	10' x1" Omni	1	12.00	1.25	1.00	35.40	5.313	1.00	0.00	5.00
21	73.50	3'6" x 2'6" Dipole	1	15.00	1.74	1.00	67.61	3.844	1.00	0.00	-1.80
22	73.50	Sidearm	1	53.32	3.50	1.00	153.03	10.943	1.00	0.00	0.00
		Totals:	**58**	**7,947.67**			**20,240.44**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	108.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	96.60	(3) 2" Hybrid	0.00	Inside
0.00	86.00	(1) 1.4" Hybrid	0.00	Inside
0.00	73.50	(2) 1/2" Coax	0.00	Inside

Shaft Section Properties

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3125	56.000	55.233	21640.5	30.19	179.20	65.9	761.1	0.0
5.00		0.3125	54.717	53.961	20179.0	29.46	175.09	66.7	726.4	928.9
10.00		0.3125	53.434	52.688	18784.9	28.74	170.99	67.6	692.4	907.3
15.00		0.3125	52.151	51.416	17456.4	28.02	166.88	68.4	659.3	885.6
20.00		0.3125	50.868	50.143	16192.2	27.29	162.78	69.3	627.0	864.0
25.00		0.3125	49.585	48.871	14990.5	26.57	158.67	70.2	595.4	842.3
30.00		0.3125	48.302	47.598	13849.7	25.84	154.57	71.0	564.7	820.7
35.00		0.3125	47.019	46.326	12768.4	25.12	150.46	71.9	534.9	799.0
40.00		0.3125	45.736	45.053	11744.9	24.40	146.36	72.7	505.8	777.4
45.00		0.3125	44.453	43.781	10777.5	23.67	142.25	73.6	477.5	755.7
46.50	Bot - Section 2	0.3125	44.069	43.399	10498.1	23.45	141.02	73.8	469.2	222.5
50.00		0.3125	43.171	42.508	9864.8	22.95	138.15	74.4	450.1	926.1
52.50	Top - Section 1	0.2500	43.029	33.944	7848.3	28.94	172.12	0.0	0.0	649.8
55.00		0.2500	42.388	33.435	7500.5	28.49	169.55	67.9	348.5	286.6
60.00		0.2500	41.105	32.417	6836.1	27.58	164.42	69.0	327.6	560.2
65.00		0.2500	39.822	31.399	6212.1	26.68	159.29	70.0	307.3	542.9
70.00		0.2500	38.539	30.381	5627.3	25.77	154.15	71.1	287.6	525.6
73.50		0.2500	37.641	29.668	5240.5	25.14	150.56	71.8	274.2	357.6
75.00		0.2500	37.256	29.363	5080.3	24.87	149.02	72.2	268.6	150.7
80.00		0.2500	35.973	28.345	4570.1	23.96	143.89	73.2	250.2	490.9
85.00		0.2500	34.690	27.327	4095.1	23.06	138.76	74.3	232.5	473.6
86.00		0.2500	34.433	27.123	4004.3	22.88	137.73	74.5	229.0	92.6
90.00		0.2500	33.407	26.309	3654.3	22.15	133.63	75.3	215.5	363.6
95.00		0.2500	32.124	25.291	3246.3	21.25	128.50	76.4	199.0	439.0
96.00		0.2500	31.867	25.087	3168.6	21.07	127.47	76.6	195.8	85.7
98.50	Top - Section 2	0.2500	31.226	24.578	2979.6	20.61	124.90	77.2	187.9	211.3
98.50	Bot - Section 3	0.3120	28.000	27.139	2602.7	16.52	100.08	35.0	185.9	
100.00		0.3120	28.000	27.139	2602.7	0.00	89.74	35.0	185.9	138.5
105.00		0.3120	28.000	27.139	2602.7	0.00	89.74	35.0	185.9	461.7
108.00		0.3120	28.000	27.139	2602.7	0.00	89.74	35.0	185.9	277.0
108.50		0.3120	28.000	27.139	2602.7	0.00	89.74	35.0	185.9	46.2
										14882.9

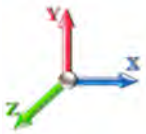
Wind Loading - Shaft

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Load Case: 1.2D + 1.6W 98 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 19

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.853	21.84	428.14	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.853	21.84	418.34	0.650	0.000	5.00	23.422	15.22	532.0	0.0	1114.7
10.00		1.00	0.85	19.853	21.84	408.53	0.650	0.000	5.00	22.879	14.87	519.6	0.0	1088.7
15.00		1.00	0.85	19.853	21.84	398.72	0.650	0.000	5.00	22.336	14.52	507.3	0.0	1062.7
20.00		1.00	0.90	21.065	23.17	400.60	0.650	0.000	5.00	21.793	14.17	525.2	0.0	1036.7
25.00		1.00	0.95	22.078	24.29	399.78	0.650	0.000	5.00	21.251	13.81	536.7	0.0	1010.8
30.00		1.00	0.98	22.942	25.24	396.98	0.650	0.000	5.00	20.708	13.46	543.5	0.0	984.8
35.00		1.00	1.01	23.699	26.07	392.76	0.650	0.000	5.00	20.165	13.11	546.7	0.0	958.8
40.00		1.00	1.04	24.375	26.81	387.45	0.650	0.000	5.00	19.622	12.75	547.2	0.0	932.8
45.00		1.00	1.07	24.987	27.49	381.28	0.650	0.000	5.00	19.079	12.40	545.4	0.0	906.8
46.50	Bot - Section 2	1.00	1.08	25.160	27.68	379.29	0.650	0.000	1.50	5.618	3.65	161.7	0.0	267.0
50.00		1.00	1.09	25.547	28.10	374.41	0.650	0.000	3.50	13.067	8.49	381.9	0.0	1111.4
52.50	Top - Section 1	1.00	1.11	25.811	28.39	370.74	0.650	0.000	2.50	9.171	5.96	270.8	0.0	779.8
55.00		1.00	1.12	26.065	28.67	371.32	0.650	0.000	2.50	9.035	5.87	269.4	0.0	343.9
60.00		1.00	1.14	26.547	29.20	363.40	0.650	0.000	5.00	17.663	11.48	536.4	0.0	672.2
65.00		1.00	1.16	26.998	29.70	355.03	0.650	0.000	5.00	17.120	11.13	528.8	0.0	651.5
70.00		1.00	1.17	27.423	30.16	346.29	0.650	0.000	5.00	16.577	10.77	520.0	0.0	630.7
73.50	Appurtenance(s)	1.00	1.19	27.706	30.48	339.96	0.650	0.000	3.50	11.281	7.33	357.6	0.0	429.1
75.00		1.00	1.19	27.824	30.61	337.20	0.650	0.000	1.50	4.753	3.09	151.3	0.0	180.8
80.00		1.00	1.21	28.204	31.02	327.81	0.650	0.000	5.00	15.491	10.07	499.8	0.0	589.1
85.00		1.00	1.22	28.567	31.42	318.14	0.650	0.000	5.00	14.948	9.72	488.5	0.0	568.3
86.00	Appurtenance(s)	1.00	1.23	28.637	31.50	316.18	0.650	0.000	1.00	2.925	1.90	95.8	0.0	111.2
90.00		1.00	1.24	28.912	31.80	308.22	0.650	0.000	4.00	11.481	7.46	379.7	0.0	436.4
95.00		1.00	1.25	29.243	32.17	298.08	0.650	0.000	5.00	13.863	9.01	463.8	0.0	526.8
96.00	Appurtenance(s)	1.00	1.25	29.308	32.24	296.02	0.650	0.000	1.00	2.707	1.76	90.8	0.0	102.9
98.50	Top - Section 2	1.00	1.26	29.467	32.41	290.85	0.650	0.000	2.50	6.674	4.34	225.0	0.0	253.5
100.00		1.00	1.27	29.561	32.52	257.25	0.600	0.000	1.50	3.500	2.10	109.3	0.0	166.2
105.00		1.00	1.28	29.866	32.85	258.57	0.600	0.000	5.00	11.667	7.00	368.0	0.0	554.1
108.00	Appurtenance(s)	1.00	1.29	30.044	33.05	259.34	0.600	0.000	3.00	7.000	4.20	222.1	0.0	332.5
108.50	Appurtenance(s)	1.00	1.29	30.073	33.08	259.47	0.600	0.000	0.50	1.167	0.70	37.1	0.0	55.4
								Totals:	**108.50**			**10,961.2**		**17,859.5**

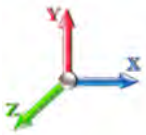
Discrete Appurtenance Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Load Case: 1.2D + 1.6W 98 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 19

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	108.50	Lightning Rod	1	30.073	33.080	1.00	1.00	0.50	6.00	0.000	0.000	26.46	0.00	0.00
2	108.00	RRH2X60-PCS	3	30.044	33.048	0.89	1.00	5.87	198.00	0.000	0.000	310.60	0.00	0.00
3	108.00	SBNHH-1D65B	9	30.044	33.048	0.83	1.00	60.96	432.00	0.000	0.000	3223.14	0.00	0.00
4	108.00	RRH2x60-700	3	30.044	33.048	0.76	1.00	7.98	216.00	0.000	0.000	421.96	0.00	0.00
5	108.00	DB-T1-6Z-8AB-0Z	2	30.044	33.048	0.90	1.00	8.64	45.36	0.000	0.000	456.86	0.00	0.00
6	108.00	Flush Mount	1	30.044	33.048	1.00	1.00	5.00	420.00	0.000	0.000	264.39	0.00	0.00
7	108.00	RRH 4x45-AWS	3	30.044	33.048	0.99	1.00	8.23	216.00	0.000	0.000	435.01	0.00	0.00
8	96.00	ULPD12-472	1	29.308	32.239	0.75	0.75	30.22	2797.20	0.000	0.000	1559.07	0.00	0.00
9	96.00	ALU 800 MHz RRH RRU	6	29.308	32.239	0.54	0.80	8.01	381.60	0.000	0.000	413.06	0.00	0.00
10	96.00	Ericsson 4449 B71 + B85	3	29.308	32.239	0.54	0.80	3.17	263.52	0.000	0.000	163.40	0.00	0.00
11	96.00	Ericsson 4415 B25 RRU	3	29.308	32.239	0.54	0.80	2.99	166.68	0.000	0.000	154.28	0.00	0.00
12	96.00	AIR6449 B41	3	29.308	32.239	0.57	0.80	9.63	370.80	0.000	0.000	496.61	0.00	0.00
13	96.00	APXVAALL24-43-U-NA20	3	29.308	32.239	0.58	0.80	35.46	442.08	0.000	0.000	1829.13	0.00	0.00
14	96.00	AIR32	3	29.308	32.239	0.70	0.80	13.59	475.92	0.000	0.000	701.15	0.00	0.00
15	86.00	RDIDC-9181-PF-48	1	28.637	31.501	1.00	1.00	2.01	26.22	0.000	0.000	101.31	0.00	0.00
16	86.00	TA08025-B604	3	28.637	31.501	0.50	0.75	2.95	230.04	0.000	0.000	148.92	0.00	0.00
17	86.00	TA08025-B605	3	28.637	31.501	0.50	0.75	2.95	270.00	0.000	0.000	148.92	0.00	0.00
18	86.00	SNP8HR-3XX	1	28.637	31.501	1.00	1.00	39.73	2251.20	0.000	0.000	2002.19	0.00	0.00
19	86.00	MX08FRO665-21	3	28.637	31.501	0.55	0.75	20.80	232.20	0.000	0.000	1048.14	0.00	0.00
20	73.50	Sidearm	1	27.706	30.476	1.00	1.00	3.50	63.98	0.000	0.000	170.67	0.00	0.00
21	73.50	3'6" x 2'6" Dipole	1	27.561	30.318	1.00	1.00	1.74	18.00	0.000	-1.800	84.40	0.00	-151.93
22	73.50	10' x1" Omni	1	28.092	30.901	1.00	1.00	1.25	14.40	0.000	5.000	61.80	0.00	309.01
							Totals:		**9,537.20**			**14,221.46**		

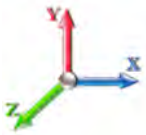
Total Applied Force Summary

Structure:	CT46140-A-SBA		**Code:**	EIA/TIA-222-G	4/28/2021
Site Name:	S. Durham-rt 17/ Lawson		**Exposure:**	C	
Height:	108.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Load Case: 1.2D + 1.6W 98 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 19

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		531.96	1148.52	0.00	0.00
10.00		519.64	1122.55	0.00	0.00
15.00		507.31	1096.57	0.00	0.00
20.00		525.19	1070.59	0.00	0.00
25.00		536.74	1044.61	0.00	0.00
30.00		543.50	1018.63	0.00	0.00
35.00		546.71	992.65	0.00	0.00
40.00		547.16	966.67	0.00	0.00
45.00		545.38	940.69	0.00	0.00
46.50		161.70	277.14	0.00	0.00
50.00		381.89	1135.05	0.00	0.00
52.50		270.79	796.72	0.00	0.00
55.00		269.40	360.83	0.00	0.00
60.00		536.40	706.08	0.00	0.00
65.00		528.76	685.29	0.00	0.00
70.00		520.04	664.51	0.00	0.00
73.50	(3) attachments	674.42	549.18	0.00	157.09
75.00		151.30	190.36	0.00	0.00
80.00		499.84	621.02	0.00	0.00
85.00		488.52	600.24	0.00	0.00
86.00	(11) attachments	3545.29	3127.21	0.00	0.00
90.00		379.75	456.43	0.00	0.00
95.00		463.78	551.83	0.00	0.00
96.00	(22) attachments	5407.47	5005.67	0.00	0.00
98.50		224.97	261.53	0.00	0.00
100.00		109.26	170.19	0.00	0.00
105.00		367.95	567.29	0.00	0.00
108.00	(21) attachments	5334.04	1867.73	0.00	0.00
108.50	(1) attachments	63.51	61.41	0.00	0.00
	Totals:	**25,182.67**	**28,057.17**	**0.00**	**157.09**

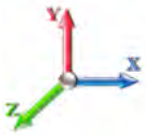
Calculated Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Load Case: 1.2D + 1.6W 98 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 19

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-28.03	-25.21	0.00	-2010.5	0.00	2010.59	3275.65	1637.82	7512.12	3761.64	0.00	0.000	0.000	0.543
5.00	-26.82	-24.74	0.00	-1884.5	0.00	1884.51	3241.53	1620.76	7261.66	3636.23	0.07	-0.128	0.000	0.527
10.00	-25.65	-24.28	0.00	-1760.8	0.00	1760.81	3205.46	1602.73	7010.56	3510.49	0.27	-0.257	0.000	0.510
15.00	-24.50	-23.82	0.00	-1639.4	0.00	1639.43	3167.44	1583.72	6759.13	3384.59	0.61	-0.385	0.000	0.492
20.00	-23.38	-23.34	0.00	-1520.3	0.00	1520.34	3127.48	1563.74	6507.68	3258.68	1.09	-0.514	0.000	0.474
25.00	-22.29	-22.84	0.00	-1403.6	0.00	1403.66	3085.56	1542.78	6256.52	3132.91	1.69	-0.642	0.000	0.455
30.00	-21.23	-22.33	0.00	-1289.4	0.00	1289.47	3041.69	1520.85	6005.97	3007.45	2.44	-0.770	0.000	0.436
35.00	-20.20	-21.81	0.00	-1177.8	0.00	1177.82	2995.87	1497.94	5756.34	2882.45	3.31	-0.897	0.000	0.416
40.00	-19.20	-21.29	0.00	-1068.7	0.00	1068.75	2948.10	1474.05	5507.93	2758.06	4.32	-1.022	0.000	0.394
45.00	-18.24	-20.75	0.00	-962.29	0.00	962.29	2898.39	1449.19	5261.05	2634.44	5.46	-1.145	0.000	0.372
46.50	-17.94	-20.61	0.00	-931.16	0.00	931.16	2883.09	1441.55	5187.33	2597.52	5.82	-1.183	0.000	0.365
50.00	-16.79	-20.22	0.00	-859.04	0.00	859.04	2846.72	1423.36	5016.02	2511.74	6.72	-1.267	0.000	0.348
52.50	-15.98	-19.95	0.00	-808.49	0.00	808.49	2057.96	1028.98	3624.72	1815.05	7.40	-1.328	0.000	0.454
55.00	-15.59	-19.70	0.00	-758.62	0.00	758.62	2043.11	1021.55	3544.30	1774.78	8.12	-1.387	0.000	0.435
60.00	-14.85	-19.18	0.00	-660.13	0.00	660.13	2011.95	1005.98	3383.36	1694.19	9.64	-1.521	0.000	0.397
65.00	-14.14	-18.66	0.00	-564.24	0.00	564.24	1978.85	989.42	3222.55	1613.67	11.31	-1.649	0.000	0.357
70.00	-13.46	-18.14	0.00	-470.94	0.00	470.94	1943.79	971.90	3062.19	1533.37	13.10	-1.767	0.000	0.314
73.50	-12.92	-17.46	0.00	-407.28	0.00	407.28	1918.09	959.05	2950.37	1477.38	14.42	-1.845	0.000	0.283
75.00	-12.71	-17.32	0.00	-381.08	0.00	381.08	1906.79	953.39	2902.59	1453.45	15.01	-1.877	0.000	0.269
80.00	-12.09	-16.82	0.00	-294.48	0.00	294.48	1867.83	933.91	2744.05	1374.07	17.03	-1.972	0.000	0.221
85.00	-11.49	-16.32	0.00	-210.38	0.00	210.38	1826.92	913.46	2586.89	1295.37	19.14	-2.050	0.000	0.169
86.00	-8.49	-12.67	0.00	-194.06	0.00	194.06	1818.51	909.25	2555.66	1279.73	19.57	-2.064	0.000	0.157
90.00	-8.03	-12.28	0.00	-143.39	0.00	143.39	1784.07	892.03	2431.43	1217.52	21.32	-2.112	0.000	0.122
95.00	-7.49	-11.80	0.00	-81.99	0.00	81.99	1739.26	869.63	2277.96	1140.67	23.56	-2.156	0.000	0.076
96.00	-2.70	-6.21	0.00	-70.19	0.00	70.19	1730.06	865.03	2247.53	1125.44	24.01	-2.163	0.000	0.064
98.50	-2.44	-5.97	0.00	-54.68	0.00	54.68	1706.74	853.37	2171.89	1087.56	25.15	-2.177	0.000	0.052
98.50	-2.44	-5.97	0.00	-54.68	0.00	54.68	854.88	427.44	974.68	581.27	25.15	-2.177	0.000	0.097
100.00	-2.27	-5.86	0.00	-45.72	0.00	45.72	854.88	427.44	974.68	581.27	25.83	-2.184	0.000	0.082
105.00	-1.72	-5.47	0.00	-16.44	0.00	16.44	854.88	427.44	974.68	581.27	28.13	-2.201	0.000	0.030
108.00	-0.06	-0.07	0.00	-0.03	0.00	0.03	854.88	427.44	974.68	581.27	29.52	-2.204	0.000	0.000
108.50	0.00	-0.06	0.00	0.00	0.00	0.00	854.88	427.44	974.68	581.27	29.75	-2.204	0.000	0.000

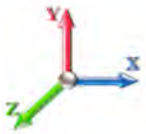
Wind Loading - Shaft

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 0.9D + 1.6W 98 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 19

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.853	21.84	428.14	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.853	21.84	418.34	0.650	0.000	5.00	23.422	15.22	532.0	0.0	836.0
10.00		1.00	0.85	19.853	21.84	408.53	0.650	0.000	5.00	22.879	14.87	519.6	0.0	816.5
15.00		1.00	0.85	19.853	21.84	398.72	0.650	0.000	5.00	22.336	14.52	507.3	0.0	797.0
20.00		1.00	0.90	21.065	23.17	400.60	0.650	0.000	5.00	21.793	14.17	525.2	0.0	777.6
25.00		1.00	0.95	22.078	24.29	399.78	0.650	0.000	5.00	21.251	13.81	536.7	0.0	758.1
30.00		1.00	0.98	22.942	25.24	396.98	0.650	0.000	5.00	20.708	13.46	543.5	0.0	738.6
35.00		1.00	1.01	23.699	26.07	392.76	0.650	0.000	5.00	20.165	13.11	546.7	0.0	719.1
40.00		1.00	1.04	24.375	26.81	387.45	0.650	0.000	5.00	19.622	12.75	547.2	0.0	699.6
45.00		1.00	1.07	24.987	27.49	381.28	0.650	0.000	5.00	19.079	12.40	545.4	0.0	680.1
46.50	Bot - Section 2	1.00	1.08	25.160	27.68	379.29	0.650	0.000	1.50	5.618	3.65	161.7	0.0	200.2
50.00		1.00	1.09	25.547	28.10	374.41	0.650	0.000	3.50	13.067	8.49	381.9	0.0	833.5
52.50	Top - Section 1	1.00	1.11	25.811	28.39	370.74	0.650	0.000	2.50	9.171	5.96	270.8	0.0	584.8
55.00		1.00	1.12	26.065	28.67	371.32	0.650	0.000	2.50	9.035	5.87	269.4	0.0	257.9
60.00		1.00	1.14	26.547	29.20	363.40	0.650	0.000	5.00	17.663	11.48	536.4	0.0	504.2
65.00		1.00	1.16	26.998	29.70	355.03	0.650	0.000	5.00	17.120	11.13	528.8	0.0	488.6
70.00		1.00	1.17	27.423	30.16	346.29	0.650	0.000	5.00	16.577	10.77	520.0	0.0	473.0
73.50	Appurtenance(s)	1.00	1.19	27.706	30.48	339.96	0.650	0.000	3.50	11.281	7.33	357.6	0.0	321.8
75.00		1.00	1.19	27.824	30.61	337.20	0.650	0.000	1.50	4.753	3.09	151.3	0.0	135.6
80.00		1.00	1.21	28.204	31.02	327.81	0.650	0.000	5.00	15.491	10.07	499.8	0.0	441.8
85.00		1.00	1.22	28.567	31.42	318.14	0.650	0.000	5.00	14.948	9.72	488.5	0.0	426.2
86.00	Appurtenance(s)	1.00	1.23	28.637	31.50	316.18	0.650	0.000	1.00	2.925	1.90	95.8	0.0	83.4
90.00		1.00	1.24	28.912	31.80	308.22	0.650	0.000	4.00	11.481	7.46	379.7	0.0	327.3
95.00		1.00	1.25	29.243	32.17	298.08	0.650	0.000	5.00	13.863	9.01	463.8	0.0	395.1
96.00	Appurtenance(s)	1.00	1.25	29.308	32.24	296.02	0.650	0.000	1.00	2.707	1.76	90.8	0.0	77.1
98.50	Top - Section 2	1.00	1.26	29.467	32.41	290.85	0.650	0.000	2.50	6.674	4.34	225.0	0.0	190.1
100.00		1.00	1.27	29.561	32.52	257.25	0.600	0.000	1.50	3.500	2.10	109.3	0.0	124.7
105.00		1.00	1.28	29.866	32.85	258.57	0.600	0.000	5.00	11.667	7.00	368.0	0.0	415.6
108.00	Appurtenance(s)	1.00	1.29	30.044	33.05	259.34	0.600	0.000	3.00	7.000	4.20	222.1	0.0	249.3
108.50	Appurtenance(s)	1.00	1.29	30.073	33.08	259.47	0.600	0.000	0.50	1.167	0.70	37.1	0.0	41.6
								Totals:	**108.50**			**10,961.2**		**13,394.6**

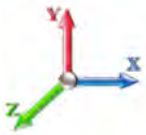
Discrete Appurtenance Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 0.9D + 1.6W 98 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 19

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	108.50	Lightning Rod	1	30.073	33.080	1.00	1.00	0.50	4.50	0.000	0.000	26.46	0.00	0.00
2	108.00	RRH2X60-PCS	3	30.044	33.048	0.89	1.00	5.87	148.50	0.000	0.000	310.60	0.00	0.00
3	108.00	SBNHH-1D65B	9	30.044	33.048	0.83	1.00	60.96	324.00	0.000	0.000	3223.14	0.00	0.00
4	108.00	RRH2x60-700	3	30.044	33.048	0.76	1.00	7.98	162.00	0.000	0.000	421.96	0.00	0.00
5	108.00	DB-T1-6Z-8AB-0Z	2	30.044	33.048	0.90	1.00	8.64	34.02	0.000	0.000	456.86	0.00	0.00
6	108.00	Flush Mount	1	30.044	33.048	1.00	1.00	5.00	315.00	0.000	0.000	264.39	0.00	0.00
7	108.00	RRH 4x45-AWS	3	30.044	33.048	0.99	1.00	8.23	162.00	0.000	0.000	435.01	0.00	0.00
8	96.00	ULPD12-472	1	29.308	32.239	0.75	0.75	30.22	2097.90	0.000	0.000	1559.07	0.00	0.00
9	96.00	ALU 800 MHz RRH RRU	6	29.308	32.239	0.54	0.80	8.01	286.20	0.000	0.000	413.06	0.00	0.00
10	96.00	Ericsson 4449 B71 + B85	3	29.308	32.239	0.54	0.80	3.17	197.64	0.000	0.000	163.40	0.00	0.00
11	96.00	Ericsson 4415 B25 RRU	3	29.308	32.239	0.54	0.80	2.99	125.01	0.000	0.000	154.28	0.00	0.00
12	96.00	AIR6449 B41	3	29.308	32.239	0.57	0.80	9.63	278.10	0.000	0.000	496.61	0.00	0.00
13	96.00	APXVAALL24-43-U-NA20	3	29.308	32.239	0.58	0.80	35.46	331.56	0.000	0.000	1829.13	0.00	0.00
14	96.00	AIR32	3	29.308	32.239	0.70	0.80	13.59	356.94	0.000	0.000	701.15	0.00	0.00
15	86.00	RDIDC-9181-PF-48	1	28.637	31.501	1.00	1.00	2.01	19.67	0.000	0.000	101.31	0.00	0.00
16	86.00	TA08025-B604	3	28.637	31.501	0.50	0.75	2.95	172.53	0.000	0.000	148.92	0.00	0.00
17	86.00	TA08025-B605	3	28.637	31.501	0.50	0.75	2.95	202.50	0.000	0.000	148.92	0.00	0.00
18	86.00	SNP8HR-3XX	1	28.637	31.501	1.00	1.00	39.73	1688.40	0.000	0.000	2002.19	0.00	0.00
19	86.00	MX08FRO665-21	3	28.637	31.501	0.55	0.75	20.80	174.15	0.000	0.000	1048.14	0.00	0.00
20	73.50	Sidearm	1	27.706	30.476	1.00	1.00	3.50	47.99	0.000	0.000	170.67	0.00	0.00
21	73.50	3'6" x 2'6" Dipole	1	27.561	30.318	1.00	1.00	1.74	13.50	0.000	-1.800	84.40	0.00	-151.93
22	73.50	10' x1" Omni	1	28.092	30.901	1.00	1.00	1.25	10.80	0.000	5.000	61.80	0.00	309.01
							Totals:		**7,152.90**			**14,221.46**		

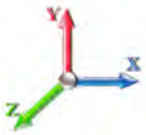
Total Applied Force Summary

Structure:	CT46140-A-SBA		**Code:**	EIA/TIA-222-G	4/28/2021
Site Name:	S. Durham-rt 17/ Lawson		**Exposure:**	C	
Height:	108.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Load Case: 0.9D + 1.6W 98 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 19

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		531.96	861.39	0.00	0.00
10.00		519.64	841.91	0.00	0.00
15.00		507.31	822.42	0.00	0.00
20.00		525.19	802.94	0.00	0.00
25.00		536.74	783.45	0.00	0.00
30.00		543.50	763.97	0.00	0.00
35.00		546.71	744.48	0.00	0.00
40.00		547.16	725.00	0.00	0.00
45.00		545.38	705.51	0.00	0.00
46.50		161.70	207.85	0.00	0.00
50.00		381.89	851.29	0.00	0.00
52.50		270.79	597.54	0.00	0.00
55.00		269.40	270.62	0.00	0.00
60.00		536.40	529.56	0.00	0.00
65.00		528.76	513.97	0.00	0.00
70.00		520.04	498.38	0.00	0.00
73.50	(3) attachments	674.42	411.88	0.00	157.09
75.00		151.30	142.77	0.00	0.00
80.00		499.84	465.77	0.00	0.00
85.00		488.52	450.18	0.00	0.00
86.00	(11) attachments	3545.29	2345.41	0.00	0.00
90.00		379.75	342.32	0.00	0.00
95.00		463.78	413.87	0.00	0.00
96.00	(22) attachments	5407.47	3754.25	0.00	0.00
98.50		224.97	196.15	0.00	0.00
100.00		109.26	127.64	0.00	0.00
105.00		367.95	425.47	0.00	0.00
108.00	(21) attachments	5334.04	1400.80	0.00	0.00
108.50	(1) attachments	63.51	46.06	0.00	0.00
	Totals:	**25,182.67**	**21,042.88**	**0.00**	**157.09**

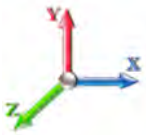
Calculated Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Load Case: 0.9D + 1.6W 98 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 19

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-21.01	-25.21	0.00	-2002.5	0.00	2002.54	3275.65	1637.82	7512.12	3761.64	0.00	0.000	0.000	0.539
5.00	-20.10	-24.72	0.00	-1876.5	0.00	1876.50	3241.53	1620.76	7261.66	3636.23	0.07	-0.127	0.000	0.522
10.00	-19.20	-24.24	0.00	-1752.9	0.00	1752.91	3205.46	1602.73	7010.56	3510.49	0.27	-0.255	0.000	0.506
15.00	-18.33	-23.77	0.00	-1631.7	0.00	1631.72	3167.44	1583.72	6759.13	3384.59	0.61	-0.384	0.000	0.488
20.00	-17.48	-23.28	0.00	-1512.8	0.00	1512.88	3127.48	1563.74	6507.68	3258.68	1.08	-0.512	0.000	0.470
25.00	-16.65	-22.77	0.00	-1396.5	0.00	1396.50	3085.56	1542.78	6256.52	3132.91	1.69	-0.639	0.000	0.451
30.00	-15.85	-22.25	0.00	-1282.6	0.00	1282.66	3041.69	1520.85	6005.97	3007.45	2.43	-0.767	0.000	0.432
35.00	-15.06	-21.73	0.00	-1171.4	0.00	1171.41	2995.87	1497.94	5756.34	2882.45	3.30	-0.893	0.000	0.412
40.00	-14.30	-21.20	0.00	-1062.7	0.00	1062.78	2948.10	1474.05	5507.93	2758.06	4.30	-1.017	0.000	0.390
45.00	-13.58	-20.66	0.00	-956.79	0.00	956.79	2898.39	1449.19	5261.05	2634.44	5.43	-1.139	0.000	0.368
46.50	-13.35	-20.51	0.00	-925.81	0.00	925.81	2883.09	1441.55	5187.33	2597.52	5.80	-1.177	0.000	0.361
50.00	-12.48	-20.12	0.00	-854.03	0.00	854.03	2846.72	1423.36	5016.02	2511.74	6.69	-1.261	0.000	0.345
52.50	-11.87	-19.85	0.00	-803.73	0.00	803.73	2057.96	1028.98	3624.72	1815.05	7.37	-1.321	0.000	0.449
55.00	-11.57	-19.59	0.00	-754.11	0.00	754.11	2043.11	1021.55	3544.30	1774.78	8.08	-1.380	0.000	0.431
60.00	-11.01	-19.07	0.00	-656.14	0.00	656.14	2011.95	1005.98	3383.36	1694.19	9.60	-1.513	0.000	0.393
65.00	-10.47	-18.55	0.00	-560.79	0.00	560.79	1978.85	989.42	3222.55	1613.67	11.25	-1.640	0.000	0.353
70.00	-9.96	-18.03	0.00	-468.04	0.00	468.04	1943.79	971.90	3062.19	1533.37	13.03	-1.758	0.000	0.311
73.50	-9.55	-17.35	0.00	-404.78	0.00	404.78	1918.09	959.05	2950.37	1477.38	14.35	-1.835	0.000	0.279
75.00	-9.40	-17.21	0.00	-378.75	0.00	378.75	1906.79	953.39	2902.59	1453.45	14.94	-1.867	0.000	0.266
80.00	-8.92	-16.71	0.00	-292.71	0.00	292.71	1867.83	933.91	2744.05	1374.07	16.94	-1.961	0.000	0.218
85.00	-8.48	-16.21	0.00	-209.17	0.00	209.17	1826.92	913.46	2586.89	1295.37	19.04	-2.039	0.000	0.166
86.00	-6.25	-12.59	0.00	-192.96	0.00	192.96	1818.51	909.25	2555.66	1279.73	19.47	-2.053	0.000	0.154
90.00	-5.92	-12.20	0.00	-142.62	0.00	142.62	1784.07	892.03	2431.43	1217.52	21.21	-2.101	0.000	0.121
95.00	-5.51	-11.72	0.00	-81.63	0.00	81.63	1739.26	869.63	2277.96	1140.67	23.44	-2.144	0.000	0.075
96.00	-1.96	-6.18	0.00	-69.91	0.00	69.91	1730.06	865.03	2247.53	1125.44	23.89	-2.151	0.000	0.063
98.50	-1.78	-5.95	0.00	-54.46	0.00	54.46	1706.74	853.37	2171.89	1087.56	25.02	-2.165	0.000	0.051
98.50	-1.78	-5.95	0.00	-54.46	0.00	54.46	854.88	427.44	974.68	581.27	25.02	-2.165	0.000	0.096
100.00	-1.65	-5.83	0.00	-45.54	0.00	45.54	854.88	427.44	974.68	581.27	25.70	-2.172	0.000	0.080
105.00	-1.24	-5.45	0.00	-16.38	0.00	16.38	854.88	427.44	974.68	581.27	27.99	-2.189	0.000	0.030
108.00	-0.04	-0.07	0.00	-0.03	0.00	0.03	854.88	427.44	974.68	581.27	29.36	-2.192	0.000	0.000
108.50	0.00	-0.06	0.00	0.00	0.00	0.00	854.88	427.44	974.68	581.27	29.59	-2.192	0.000	0.000

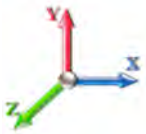
Wind Loading - Shaft

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 18

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	24.457	29.35	166.8	431.0	1545.7
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	23.988	28.79	163.6	452.0	1540.7
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	23.491	28.19	160.3	460.2	1522.9
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	22.982	27.58	166.4	462.6	1499.4
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	22.466	26.96	170.4	461.7	1472.5
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	21.946	26.34	173.0	458.6	1443.4
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	21.422	25.71	174.4	454.0	1412.8
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	20.897	25.08	175.0	448.1	1380.9
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	20.369	24.44	174.9	441.3	1348.1
46.50	Bot - Section 2	1.00	1.08	6.549	7.20	0.00	1.200	1.552	1.50	6.006	7.21	51.9	131.7	398.7
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	3.50	13.979	16.77	122.7	306.9	1418.3
52.50	Top - Section 1	1.00	1.11	6.719	7.39	0.00	1.200	1.571	2.50	9.825	11.79	87.1	217.2	997.0
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	2.50	9.693	11.63	86.8	215.1	559.1
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	18.990	22.79	173.2	421.5	1093.7
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	18.457	22.15	171.2	412.2	1063.7
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	17.925	21.51	168.9	402.6	1033.2
73.50	Appurtenance(s)	1.00	1.19	7.212	7.93	0.00	1.200	1.625	3.50	12.229	14.67	116.4	276.9	706.0
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	1.50	5.160	6.19	49.3	117.7	298.5
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	16.857	20.23	163.4	382.1	971.2
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	16.323	19.59	160.2	371.4	939.7
86.00	Appurtenance(s)	1.00	1.23	7.454	8.20	0.00	1.200	1.651	1.00	3.200	3.84	31.5	73.8	185.0
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	4.00	12.587	15.10	125.0	288.3	724.7
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	15.252	18.30	153.3	349.2	876.0
96.00	Appurtenance(s)	1.00	1.25	7.629	8.39	0.00	1.200	1.669	1.00	2.986	3.58	30.1	69.4	172.2
98.50	Top - Section 2	1.00	1.26	7.671	8.44	0.00	1.200	1.673	2.50	7.371	8.84	74.6	170.6	424.1
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	1.50	3.919	4.70	39.8	91.1	257.4
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	13.070	15.68	134.1	305.4	859.5
108.00	Appurtenance(s)	1.00	1.29	7.821	8.60	0.00	1.200	1.689	3.00	7.844	9.41	81.0	183.8	516.2
108.50	Appurtenance(s)	1.00	1.29	7.828	8.61	0.00	1.200	1.690	0.50	1.307	1.57	13.5	30.6	86.1
								Totals:	**108.50**			**3,559.0**		**26,746.8**

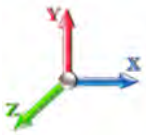
Discrete Appurtenance Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 18

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	108.50	Lightning Rod	1	7.828	8.611	1.00	1.00	2.19	20.28	0.000	0.000	18.85	0.00	0.00
2	108.00	RRH2X60-PCS	3	7.821	8.603	0.89	1.00	7.51	441.53	0.000	0.000	64.63	0.00	0.00
3	108.00	SBNHH-1D65B	9	7.821	8.603	0.83	1.00	70.33	2190.17	0.000	0.000	605.04	0.00	0.00
4	108.00	RRH2x60-700	3	7.821	8.603	0.76	1.00	9.72	409.10	0.000	0.000	83.63	0.00	0.00
5	108.00	DB-T1-6Z-8AB-0Z	2	7.821	8.603	0.90	1.00	10.16	321.92	0.000	0.000	87.39	0.00	0.00
6	108.00	Flush Mount	1	7.821	8.603	1.00	1.00	8.38	603.72	0.000	0.000	72.07	0.00	0.00
7	108.00	RRH 4x45-AWS	3	7.821	8.603	0.99	1.00	11.87	386.52	0.000	0.000	102.14	0.00	0.00
8	96.00	ULPD12-472	1	7.629	8.392	0.75	0.75	60.49	4819.63	0.000	0.000	507.66	0.00	0.00
9	96.00	ALU 800 MHz RRH RRU	6	7.629	8.392	0.54	0.80	11.53	679.39	0.000	0.000	96.72	0.00	0.00
10	96.00	Ericsson 4449 B71 + B85	3	7.629	8.392	0.54	0.80	4.04	253.99	0.000	0.000	33.93	0.00	0.00
11	96.00	Ericsson 4415 B25 RRU	3	7.629	8.392	0.54	0.80	3.85	338.92	0.000	0.000	32.35	0.00	0.00
12	96.00	AIR6449 B41	3	7.629	8.392	0.57	0.80	11.18	669.10	0.000	0.000	93.79	0.00	0.00
13	96.00	APXVAALL24-43-U-NA20	3	7.629	8.392	0.58	0.80	38.64	1662.50	0.000	0.000	324.26	0.00	0.00
14	96.00	AIR32	3	7.629	8.392	0.70	0.80	15.95	1000.68	0.000	0.000	133.83	0.00	0.00
15	86.00	RDIDC-9181-PF-48	1	7.454	8.200	1.00	1.00	2.55	98.32	0.000	0.000	20.89	0.00	0.00
16	86.00	TA08025-B604	3	7.454	8.200	0.50	0.75	3.75	337.41	0.000	0.000	30.79	0.00	0.00
17	86.00	TA08025-B605	3	7.454	8.200	0.50	0.75	3.75	380.62	0.000	0.000	30.79	0.00	0.00
18	86.00	SNP8HR-3XX	1	7.454	8.200	1.00	1.00	86.94	4037.32	0.000	0.000	712.91	0.00	0.00
19	86.00	MX08FRO665-21	3	7.454	8.200	0.55	0.75	23.10	856.00	0.000	0.000	189.44	0.00	0.00
20	73.50	Sidearm	1	7.212	7.933	1.00	1.00	10.94	133.02	0.000	0.000	86.81	0.00	0.00
21	73.50	3'6" x 2'6" Dipole	1	7.174	7.892	1.00	1.00	3.84	54.41	0.000	-1.800	30.33	0.00	-54.60
22	73.50	10' x1" Omni	1	7.313	8.044	1.00	1.00	5.31	23.80	0.000	5.000	42.73	0.00	213.67
							Totals:		**19,718.35**			**3,400.99**		

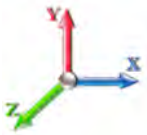
Total Applied Force Summary

Structure:	CT46140-A-SBA		**Code:**	EIA/TIA-222-G	4/28/2021
Site Name:	S. Durham-rt 17/ Lawson		**Exposure:**	C	
Height:	108.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 18

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		166.84	1579.50	0.00	0.00
10.00		163.64	1574.59	0.00	0.00
15.00		160.25	1556.75	0.00	0.00
20.00		166.35	1533.20	0.00	0.00
25.00		170.44	1506.33	0.00	0.00
30.00		173.00	1477.27	0.00	0.00
35.00		174.45	1446.62	0.00	0.00
40.00		175.02	1414.76	0.00	0.00
45.00		174.88	1381.95	0.00	0.00
46.50		51.92	408.86	0.00	0.00
50.00		122.71	1442.00	0.00	0.00
52.50		87.14	1013.95	0.00	0.00
55.00		86.81	575.97	0.00	0.00
60.00		173.22	1127.58	0.00	0.00
65.00		171.22	1097.54	0.00	0.00
70.00		168.90	1067.07	0.00	0.00
73.50	(3) attachments	276.30	940.91	0.00	159.07
75.00		49.33	308.11	0.00	0.00
80.00		163.37	1003.12	0.00	0.00
85.00		160.22	971.64	0.00	0.00
86.00	(11) attachments	1016.30	5901.07	0.00	0.00
90.00		125.04	744.77	0.00	0.00
95.00		153.26	901.04	0.00	0.00
96.00	(22) attachments	1252.62	9601.46	0.00	0.00
98.50		74.63	432.14	0.00	0.00
100.00		39.81	261.33	0.00	0.00
105.00		134.13	872.66	0.00	0.00
108.00	(21) attachments	1095.87	4877.11	0.00	0.00
108.50	(1) attachments	32.37	106.33	0.00	0.00
	Totals:	**6,960.01**	**47,125.62**	**0.00**	**159.07**

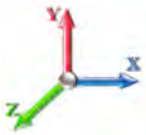
Calculated Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 18

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-47.12	-6.97	0.00	-537.01	0.00	537.01	3275.65	1637.82	7512.12	3761.64	0.00	0.000	0.000	0.157
5.00	-45.54	-6.83	0.00	-502.14	0.00	502.14	3241.53	1620.76	7261.66	3636.23	0.02	-0.034	0.000	0.152
10.00	-43.96	-6.70	0.00	-467.97	0.00	467.97	3205.46	1602.73	7010.56	3510.49	0.07	-0.068	0.000	0.147
15.00	-42.40	-6.56	0.00	-434.50	0.00	434.50	3167.44	1583.72	6759.13	3384.59	0.16	-0.103	0.000	0.142
20.00	-40.86	-6.41	0.00	-401.71	0.00	401.71	3127.48	1563.74	6507.68	3258.68	0.29	-0.137	0.000	0.136
25.00	-39.35	-6.26	0.00	-369.65	0.00	369.65	3085.56	1542.78	6256.52	3132.91	0.45	-0.170	0.000	0.131
30.00	-37.87	-6.11	0.00	-338.34	0.00	338.34	3041.69	1520.85	6005.97	3007.45	0.65	-0.204	0.000	0.125
35.00	-36.43	-5.95	0.00	-307.81	0.00	307.81	2995.87	1497.94	5756.34	2882.45	0.88	-0.237	0.000	0.119
40.00	-35.01	-5.78	0.00	-278.08	0.00	278.08	2948.10	1474.05	5507.93	2758.06	1.15	-0.270	0.000	0.113
45.00	-33.63	-5.62	0.00	-249.16	0.00	249.16	2898.39	1449.19	5261.05	2634.44	1.45	-0.302	0.000	0.106
46.50	-33.21	-5.57	0.00	-240.74	0.00	240.74	2883.09	1441.55	5187.33	2597.52	1.54	-0.312	0.000	0.104
50.00	-31.77	-5.45	0.00	-221.24	0.00	221.24	2846.72	1423.36	5016.02	2511.74	1.78	-0.333	0.000	0.099
52.50	-30.76	-5.36	0.00	-207.62	0.00	207.62	2057.96	1028.98	3624.72	1815.05	1.96	-0.349	0.000	0.129
55.00	-30.18	-5.29	0.00	-194.21	0.00	194.21	2043.11	1021.55	3544.30	1774.78	2.15	-0.364	0.000	0.124
60.00	-29.05	-5.12	0.00	-167.77	0.00	167.77	2011.95	1005.98	3383.36	1694.19	2.55	-0.398	0.000	0.113
65.00	-27.95	-4.96	0.00	-142.15	0.00	142.15	1978.85	989.42	3222.55	1613.67	2.98	-0.431	0.000	0.102
70.00	-26.88	-4.79	0.00	-117.35	0.00	117.35	1943.79	971.90	3062.19	1533.37	3.45	-0.460	0.000	0.090
73.50	-25.94	-4.52	0.00	-100.42	0.00	100.42	1918.09	959.05	2950.37	1477.38	3.79	-0.480	0.000	0.082
75.00	-25.63	-4.47	0.00	-93.64	0.00	93.64	1906.79	953.39	2902.59	1453.45	3.95	-0.488	0.000	0.078
80.00	-24.63	-4.31	0.00	-71.29	0.00	71.29	1867.83	933.91	2744.05	1374.07	4.47	-0.511	0.000	0.065
85.00	-23.66	-4.14	0.00	-49.75	0.00	49.75	1826.92	913.46	2586.89	1295.37	5.02	-0.529	0.000	0.051
86.00	-17.77	-3.07	0.00	-45.60	0.00	45.60	1818.51	909.25	2555.66	1279.73	5.13	-0.533	0.000	0.045
90.00	-17.02	-2.95	0.00	-33.31	0.00	33.31	1784.07	892.03	2431.43	1217.52	5.58	-0.544	0.000	0.037
95.00	-16.12	-2.79	0.00	-18.58	0.00	18.58	1739.26	869.63	2277.96	1140.67	6.15	-0.554	0.000	0.026
96.00	-6.54	-1.44	0.00	-15.79	0.00	15.79	1730.06	865.03	2247.53	1125.44	6.27	-0.556	0.000	0.018
98.50	-6.10	-1.36	0.00	-12.19	0.00	12.19	1706.74	853.37	2171.89	1087.56	6.56	-0.559	0.000	0.015
98.50	-6.10	-1.36	0.00	-12.19	0.00	12.19	854.88	427.44	974.68	581.27	6.56	-0.559	0.000	0.028
100.00	-5.84	-1.32	0.00	-10.15	0.00	10.15	854.88	427.44	974.68	581.27	6.74	-0.560	0.000	0.024
105.00	-4.97	-1.18	0.00	-3.55	0.00	3.55	854.88	427.44	974.68	581.27	7.33	-0.564	0.000	0.012
108.00	-0.11	-0.03	0.00	-0.02	0.00	0.02	854.88	427.44	974.68	581.27	7.68	-0.565	0.000	0.000
108.50	0.00	-0.03	0.00	0.00	0.00	0.00	854.88	427.44	974.68	581.27	7.74	-0.565	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	16
Gust Response Factor	1.10				**Sds**	0.12		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.04		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.64		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		928.90	0.00	0.04	0.02	11.46	
10.00		907.25	0.02	0.06	0.04	15.42	
15.00		885.60	0.04	0.07	0.04	16.74	
20.00		863.95	0.06	0.07	0.04	17.16	
25.00		842.30	0.10	0.07	0.04	17.35	
30.00		820.65	0.14	0.07	0.03	17.44	
35.00		799.01	0.20	0.06	0.02	17.20	
40.00		777.36	0.26	0.05	0.02	16.14	
45.00		755.71	0.33	0.04	0.01	13.65	
46.50	Bot - Section 2	222.49	0.35	0.03	0.01	3.73	
50.00		926.13	0.40	0.02	0.01	11.67	
52.50	Top - Section 1	649.83	0.44	0.00	0.01	5.69	
55.00		286.59	0.49	-0.01	0.01	1.23	
60.00		560.20	0.58	-0.04	0.01	-3.03	
65.00		542.88	0.68	-0.08	0.03	-7.45	
70.00		525.56	0.79	-0.11	0.05	-9.45	
73.50	Appurtenance(s)	437.91	0.87	-0.12	0.08	-7.76	
75.00		150.65	0.90	-0.12	0.09	-2.52	
80.00		490.92	1.03	-0.10	0.15	-4.61	
85.00		473.60	1.16	-0.03	0.23	1.92	
86.00	Appurtenance(s)	2600.6	1.19	-0.01	0.25	19.44	
90.00		363.64	1.30	0.12	0.34	8.59	
95.00		438.96	1.45	0.38	0.48	21.70	
96.00	Appurtenance(s)	4167.2	1.48	0.45	0.52	230.64	
98.50	Top - Section 2	211.25	1.56	0.65	0.61	15.05	
100.00		138.52	1.61	0.80	0.68	11.30	
105.00		461.74	1.77	1.41	0.93	55.50	
108.00	Appurtenance(s)	1549.8	1.87	1.89	1.11	227.14	
108.50	Appurtenance(s)	51.17	1.89	1.98	1.14	7.74	
	Totals:	**22,830.5**				**729.1**	**Total Wind:** **25,182.7**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Load Case:	1.2D + 1.0E							**Iterations**	16
Gust Response Factor	1.10			**Sds**	0.12			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.64	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-28.06	-0.76	0.00	-66.39	0.00	66.39	3275.65	1637.82	7512.12	3761.64		0.00	0.00	0.026
5.00	-26.91	-0.75	0.00	-62.57	0.00	62.57	3241.53	1620.76	7261.66	3636.23		0.00	0.00	0.026
10.00	-25.79	-0.74	0.00	-58.80	0.00	58.80	3205.46	1602.73	7010.56	3510.49		0.01	-0.01	0.025
15.00	-24.69	-0.73	0.00	-55.09	0.00	55.09	3167.44	1583.72	6759.13	3384.59		0.02	-0.01	0.024
20.00	-23.62	-0.71	0.00	-51.46	0.00	51.46	3127.48	1563.74	6507.68	3258.68		0.04	-0.02	0.023
25.00	-22.57	-0.69	0.00	-47.91	0.00	47.91	3085.56	1542.78	6256.52	3132.91		0.06	-0.02	0.023
30.00	-21.56	-0.68	0.00	-44.44	0.00	44.44	3041.69	1520.85	6005.97	3007.45		0.08	-0.03	0.022
35.00	-20.56	-0.66	0.00	-41.05	0.00	41.05	2995.87	1497.94	5756.34	2882.45		0.11	-0.03	0.021
40.00	-19.60	-0.65	0.00	-37.74	0.00	37.74	2948.10	1474.05	5507.93	2758.06		0.15	-0.03	0.020
45.00	-18.66	-0.63	0.00	-34.51	0.00	34.51	2898.39	1449.19	5261.05	2634.44		0.18	-0.04	0.020
46.50	-18.38	-0.63	0.00	-33.56	0.00	33.56	2883.09	1441.55	5187.33	2597.52		0.20	-0.04	0.019
50.00	-17.24	-0.62	0.00	-31.36	0.00	31.36	2846.72	1423.36	5016.02	2511.74		0.23	-0.04	0.019
52.50	-16.45	-0.61	0.00	-29.81	0.00	29.81	2057.96	1028.98	3624.72	1815.05		0.25	-0.05	0.024
55.00	-16.09	-0.61	0.00	-28.28	0.00	28.28	2043.11	1021.55	3544.30	1774.78		0.28	-0.05	0.024
60.00	-15.38	-0.61	0.00	-25.22	0.00	25.22	2011.95	1005.98	3383.36	1694.19		0.33	-0.05	0.023
65.00	-14.69	-0.61	0.00	-22.15	0.00	22.15	1978.85	989.42	3222.55	1613.67		0.39	-0.06	0.021
70.00	-14.03	-0.61	0.00	-19.08	0.00	19.08	1943.79	971.90	3062.19	1533.37		0.45	-0.06	0.020
73.50	-13.48	-0.61	0.00	-16.94	0.00	16.94	1918.09	959.05	2950.37	1477.38		0.50	-0.07	0.018
75.00	-13.29	-0.61	0.00	-16.01	0.00	16.01	1906.79	953.39	2902.59	1453.45		0.52	-0.07	0.018
80.00	-12.67	-0.61	0.00	-12.94	0.00	12.94	1867.83	933.91	2744.05	1374.07		0.59	-0.07	0.016
85.00	-12.07	-0.61	0.00	-9.87	0.00	9.87	1826.92	913.46	2586.89	1295.37		0.67	-0.07	0.014
86.00	-8.94	-0.59	0.00	-9.26	0.00	9.26	1818.51	909.25	2555.66	1279.73		0.68	-0.08	0.012
90.00	-8.48	-0.58	0.00	-6.90	0.00	6.90	1784.07	892.03	2431.43	1217.52		0.75	-0.08	0.010
95.00	-7.93	-0.56	0.00	-4.00	0.00	4.00	1739.26	869.63	2277.96	1140.67		0.83	-0.08	0.008
96.00	-2.93	-0.32	0.00	-3.44	0.00	3.44	1730.06	865.03	2247.53	1125.44		0.85	-0.08	0.005
98.50	-2.67	-0.31	0.00	-2.64	0.00	2.64	1706.74	853.37	2171.89	1087.56		0.89	-0.08	0.004
98.50	-2.67	-0.31	0.00	-2.64	0.00	2.64	854.88	427.44	974.68	581.27		0.89	-0.08	0.008
100.00	-2.50	-0.29	0.00	-2.18	0.00	2.18	854.88	427.44	974.68	581.27		0.91	-0.08	0.007
105.00	-1.93	-0.24	0.00	-0.72	0.00	0.72	854.88	427.44	974.68	581.27		1.00	-0.08	0.003
108.00	-0.06	-0.01	0.00	0.00	0.00	0.00	854.88	427.44	974.68	581.27		1.05	-0.08	0.000
108.50	0.00	-0.01	0.00	0.00	0.00	0.00	854.88	427.44	974.68	581.27		1.06	-0.08	0.000

Seismic Segment Forces (Factored)

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Load Case:	0.9D + 1.0E							**Iterations**	16
Gust Response Factor	1.10				**Sds**	0.12		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.04		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.64		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		928.90	0.00	0.04	0.02	11.46	
10.00		907.25	0.02	0.06	0.04	15.42	
15.00		885.60	0.04	0.07	0.04	16.74	
20.00		863.95	0.06	0.07	0.04	17.16	
25.00		842.30	0.10	0.07	0.04	17.35	
30.00		820.65	0.14	0.07	0.03	17.44	
35.00		799.01	0.20	0.06	0.02	17.20	
40.00		777.36	0.26	0.05	0.02	16.14	
45.00		755.71	0.33	0.04	0.01	13.65	
46.50	Bot - Section 2	222.49	0.35	0.03	0.01	3.73	
50.00		926.13	0.40	0.02	0.01	11.67	
52.50	Top - Section 1	649.83	0.44	0.00	0.01	5.69	
55.00		286.59	0.49	-0.01	0.01	1.23	
60.00		560.20	0.58	-0.04	0.01	-3.03	
65.00		542.88	0.68	-0.08	0.03	-7.45	
70.00		525.56	0.79	-0.11	0.05	-9.45	
73.50	Appurtenance(s)	437.91	0.87	-0.12	0.08	-7.76	
75.00		150.65	0.90	-0.12	0.09	-2.52	
80.00		490.92	1.03	-0.10	0.15	-4.61	
85.00		473.60	1.16	-0.03	0.23	1.92	
86.00	Appurtenance(s)	2600.6	1.19	-0.01	0.25	19.44	
90.00		363.64	1.30	0.12	0.34	8.59	
95.00		438.96	1.45	0.38	0.48	21.70	
96.00	Appurtenance(s)	4167.2	1.48	0.45	0.52	230.64	
98.50	Top - Section 2	211.25	1.56	0.65	0.61	15.05	
100.00		138.52	1.61	0.80	0.68	11.30	
105.00		461.74	1.77	1.41	0.93	55.50	
108.00	Appurtenance(s)	1549.8	1.87	1.89	1.11	227.14	
108.50	Appurtenance(s)	51.17	1.89	1.98	1.14	7.74	
	Totals:	**22,830.5**				**729.1**	**Total Wind:** **25,182.7**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Load Case:	0.9D + 1.0E							**Iterations**	16
Gust Response Factor	1.10			**Sds**	0.12			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.64	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-21.04	-0.76	0.00	-66.11	0.00	66.11	3275.65	1637.82	7512.12	3761.64		0.00	0.00	0.024
5.00	-20.18	-0.75	0.00	-62.29	0.00	62.29	3241.53	1620.76	7261.66	3636.23		0.00	0.00	0.023
10.00	-19.34	-0.74	0.00	-58.52	0.00	58.52	3205.46	1602.73	7010.56	3510.49		0.01	-0.01	0.023
15.00	-18.52	-0.72	0.00	-54.82	0.00	54.82	3167.44	1583.72	6759.13	3384.59		0.02	-0.01	0.022
20.00	-17.71	-0.71	0.00	-51.20	0.00	51.20	3127.48	1563.74	6507.68	3258.68		0.04	-0.02	0.021
25.00	-16.93	-0.69	0.00	-47.66	0.00	47.66	3085.56	1542.78	6256.52	3132.91		0.06	-0.02	0.021
30.00	-16.17	-0.68	0.00	-44.20	0.00	44.20	3041.69	1520.85	6005.97	3007.45		0.08	-0.03	0.020
35.00	-15.42	-0.66	0.00	-40.83	0.00	40.83	2995.87	1497.94	5756.34	2882.45		0.11	-0.03	0.019
40.00	-14.70	-0.64	0.00	-37.53	0.00	37.53	2948.10	1474.05	5507.93	2758.06		0.14	-0.03	0.019
45.00	-13.99	-0.63	0.00	-34.32	0.00	34.32	2898.39	1449.19	5261.05	2634.44		0.18	-0.04	0.018
46.50	-13.78	-0.63	0.00	-33.37	0.00	33.37	2883.09	1441.55	5187.33	2597.52		0.20	-0.04	0.018
50.00	-12.93	-0.62	0.00	-31.18	0.00	31.18	2846.72	1423.36	5016.02	2511.74		0.23	-0.04	0.017
52.50	-12.33	-0.61	0.00	-29.64	0.00	29.64	2057.96	1028.98	3624.72	1815.05		0.25	-0.05	0.022
55.00	-12.06	-0.61	0.00	-28.12	0.00	28.12	2043.11	1021.55	3544.30	1774.78		0.27	-0.05	0.022
60.00	-11.53	-0.61	0.00	-25.07	0.00	25.07	2011.95	1005.98	3383.36	1694.19		0.33	-0.05	0.021
65.00	-11.02	-0.61	0.00	-22.03	0.00	22.03	1978.85	989.42	3222.55	1613.67		0.38	-0.06	0.019
70.00	-10.52	-0.61	0.00	-18.98	0.00	18.98	1943.79	971.90	3062.19	1533.37		0.45	-0.06	0.018
73.50	-10.11	-0.61	0.00	-16.84	0.00	16.84	1918.09	959.05	2950.37	1477.38		0.49	-0.07	0.017
75.00	-9.97	-0.61	0.00	-15.93	0.00	15.93	1906.79	953.39	2902.59	1453.45		0.51	-0.07	0.016
80.00	-9.50	-0.61	0.00	-12.88	0.00	12.88	1867.83	933.91	2744.05	1374.07		0.59	-0.07	0.014
85.00	-9.05	-0.61	0.00	-9.83	0.00	9.83	1826.92	913.46	2586.89	1295.37		0.66	-0.07	0.013
86.00	-6.71	-0.59	0.00	-9.22	0.00	9.22	1818.51	909.25	2555.66	1279.73		0.68	-0.08	0.011
90.00	-6.36	-0.58	0.00	-6.87	0.00	6.87	1784.07	892.03	2431.43	1217.52		0.74	-0.08	0.009
95.00	-5.95	-0.56	0.00	-3.99	0.00	3.99	1739.26	869.63	2277.96	1140.67		0.83	-0.08	0.007
96.00	-2.20	-0.32	0.00	-3.43	0.00	3.43	1730.06	865.03	2247.53	1125.44		0.84	-0.08	0.004
98.50	-2.00	-0.30	0.00	-2.63	0.00	2.63	1706.74	853.37	2171.89	1087.56		0.88	-0.08	0.004
98.50	-2.00	-0.30	0.00	-2.63	0.00	2.63	854.88	427.44	974.68	581.27		0.88	-0.08	0.007
100.00	-1.87	-0.29	0.00	-2.18	0.00	2.18	854.88	427.44	974.68	581.27		0.91	-0.08	0.006
105.00	-1.45	-0.24	0.00	-0.71	0.00	0.71	854.88	427.44	974.68	581.27		0.99	-0.08	0.003
108.00	-0.05	-0.01	0.00	0.00	0.00	0.00	854.88	427.44	974.68	581.27		1.05	-0.08	0.000
108.50	0.00	-0.01	0.00	0.00	0.00	0.00	854.88	427.44	974.68	581.27		1.05	-0.08	0.000

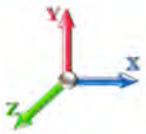
Wind Loading - Shaft

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 18

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	262.13	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	256.12	0.650	0.000	5.00	23.422	15.22	124.6	0.0	928.9
10.00		1.00	0.85	7.442	8.19	250.12	0.650	0.000	5.00	22.879	14.87	121.7	0.0	907.3
15.00		1.00	0.85	7.442	8.19	244.11	0.650	0.000	5.00	22.336	14.52	118.9	0.0	885.6
20.00		1.00	0.90	7.896	8.69	245.27	0.650	0.000	5.00	21.793	14.17	123.0	0.0	864.0
25.00		1.00	0.95	8.276	9.10	244.76	0.650	0.000	5.00	21.251	13.81	125.7	0.0	842.3
30.00		1.00	0.98	8.600	9.46	243.05	0.650	0.000	5.00	20.708	13.46	127.3	0.0	820.7
35.00		1.00	1.01	8.883	9.77	240.47	0.650	0.000	5.00	20.165	13.11	128.1	0.0	799.0
40.00		1.00	1.04	9.137	10.05	237.22	0.650	0.000	5.00	19.622	12.75	128.2	0.0	777.4
45.00		1.00	1.07	9.366	10.30	233.44	0.650	0.000	5.00	19.079	12.40	127.8	0.0	755.7
46.50	Bot - Section 2	1.00	1.08	9.431	10.37	232.22	0.650	0.000	1.50	5.618	3.65	37.9	0.0	222.5
50.00		1.00	1.09	9.576	10.53	229.23	0.650	0.000	3.50	13.067	8.49	89.5	0.0	926.1
52.50	Top - Section 1	1.00	1.11	9.675	10.64	226.99	0.650	0.000	2.50	9.171	5.96	63.4	0.0	649.8
55.00		1.00	1.12	9.770	10.75	227.34	0.650	0.000	2.50	9.035	5.87	63.1	0.0	286.6
60.00		1.00	1.14	9.951	10.95	222.49	0.650	0.000	5.00	17.663	11.48	125.7	0.0	560.2
65.00		1.00	1.16	10.120	11.13	217.37	0.650	0.000	5.00	17.120	11.13	123.9	0.0	542.9
70.00		1.00	1.17	10.279	11.31	212.01	0.650	0.000	5.00	16.577	10.77	121.8	0.0	525.6
73.50	Appurtenance(s)	1.00	1.19	10.385	11.42	208.14	0.650	0.000	3.50	11.281	7.33	83.8	0.0	357.6
75.00		1.00	1.19	10.430	11.47	206.45	0.650	0.000	1.50	4.753	3.09	35.4	0.0	150.7
80.00		1.00	1.21	10.572	11.63	200.70	0.650	0.000	5.00	15.491	10.07	117.1	0.0	490.9
85.00		1.00	1.22	10.708	11.78	194.78	0.650	0.000	5.00	14.948	9.72	114.4	0.0	473.6
86.00	Appurtenance(s)	1.00	1.23	10.734	11.81	193.58	0.650	0.000	1.00	2.925	1.90	22.4	0.0	92.6
90.00		1.00	1.24	10.838	11.92	188.71	0.650	0.000	4.00	11.481	7.46	89.0	0.0	363.6
95.00		1.00	1.25	10.962	12.06	182.50	0.650	0.000	5.00	13.863	9.01	108.7	0.0	439.0
96.00	Appurtenance(s)	1.00	1.25	10.986	12.08	181.24	0.650	0.000	1.00	2.707	1.76	21.3	0.0	85.7
98.50	Top - Section 2	1.00	1.26	11.046	12.15	178.07	0.650	0.000	2.50	6.674	4.34	52.7	0.0	211.3
100.00		1.00	1.27	11.081	12.19	157.50	0.600	0.000	1.50	3.500	2.10	25.6	0.0	138.5
105.00		1.00	1.28	11.195	12.31	158.31	0.600	0.000	5.00	11.667	7.00	86.2	0.0	461.7
108.00	Appurtenance(s)	1.00	1.29	11.262	12.39	158.78	0.600	0.000	3.00	7.000	4.20	52.0	0.0	277.0
108.50	Appurtenance(s)	1.00	1.29	11.273	12.40	158.86	0.600	0.000	0.50	1.167	0.70	8.7	0.0	46.2
								Totals:	**108.50**			**2,568.0**		**14,882.9**

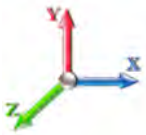
Discrete Appurtenance Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 18

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	108.50	Lightning Rod	1	11.273	12.400	1.00	1.00	0.50	5.00	0.000	0.000	6.20	0.00	0.00
2	108.00	RRH2X60-PCS	3	11.262	12.388	0.89	1.00	5.87	165.00	0.000	0.000	72.77	0.00	0.00
3	108.00	SBNHH-1D65B	9	11.262	12.388	0.83	1.00	60.96	360.00	0.000	0.000	755.11	0.00	0.00
4	108.00	RRH2x60-700	3	11.262	12.388	0.76	1.00	7.98	180.00	0.000	0.000	98.86	0.00	0.00
5	108.00	DB-T1-6Z-8AB-0Z	2	11.262	12.388	0.90	1.00	8.64	37.80	0.000	0.000	107.03	0.00	0.00
6	108.00	Flush Mount	1	11.262	12.388	1.00	1.00	5.00	350.00	0.000	0.000	61.94	0.00	0.00
7	108.00	RRH 4x45-AWS	3	11.262	12.388	0.99	1.00	8.23	180.00	0.000	0.000	101.91	0.00	0.00
8	96.00	ULPD12-472	1	10.986	12.085	0.75	0.75	30.22	2331.00	0.000	0.000	365.25	0.00	0.00
9	96.00	ALU 800 MHz RRH RRU	6	10.986	12.085	0.54	0.80	8.01	318.00	0.000	0.000	96.77	0.00	0.00
10	96.00	Ericsson 4449 B71 + B85	3	10.986	12.085	0.54	0.80	3.17	219.60	0.000	0.000	38.28	0.00	0.00
11	96.00	Ericsson 4415 B25 RRU	3	10.986	12.085	0.54	0.80	2.99	138.90	0.000	0.000	36.14	0.00	0.00
12	96.00	AIR6449 B41	3	10.986	12.085	0.57	0.80	9.63	309.00	0.000	0.000	116.34	0.00	0.00
13	96.00	APXVAALL24-43-U-NA20	3	10.986	12.085	0.58	0.80	35.46	368.40	0.000	0.000	428.52	0.00	0.00
14	96.00	AIR32	3	10.986	12.085	0.70	0.80	13.59	396.60	0.000	0.000	164.26	0.00	0.00
15	86.00	RDIDC-9181-PF-48	1	10.734	11.808	1.00	1.00	2.01	21.85	0.000	0.000	23.73	0.00	0.00
16	86.00	TA08025-B604	3	10.734	11.808	0.50	0.75	2.95	191.70	0.000	0.000	34.89	0.00	0.00
17	86.00	TA08025-B605	3	10.734	11.808	0.50	0.75	2.95	225.00	0.000	0.000	34.89	0.00	0.00
18	86.00	SNP8HR-3XX	1	10.734	11.808	1.00	1.00	39.73	1876.00	0.000	0.000	469.07	0.00	0.00
19	86.00	MX08FRO665-21	3	10.734	11.808	0.55	0.75	20.80	193.50	0.000	0.000	245.55	0.00	0.00
20	73.50	Sidearm	1	10.385	11.424	1.00	1.00	3.50	53.32	0.000	0.000	39.98	0.00	0.00
21	73.50	3'6" x 2'6" Dipole	1	10.331	11.364	1.00	1.00	1.74	15.00	0.000	-1.800	19.77	0.00	-35.59
22	73.50	10' x1" Omni	1	10.530	11.583	1.00	1.00	1.25	12.00	0.000	5.000	14.48	0.00	72.40
							Totals:		**7,947.67**			**3,331.77**		

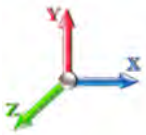
Total Applied Force Summary

Structure:	CT46140-A-SBA		**Code:**	EIA/TIA-222-G	4/28/2021
Site Name:	S. Durham-rt 17/ Lawson		**Exposure:**	C	
Height:	108.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 18

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		124.63	957.10	0.00	0.00
10.00		121.74	935.45	0.00	0.00
15.00		118.85	913.80	0.00	0.00
20.00		123.04	892.15	0.00	0.00
25.00		125.75	870.50	0.00	0.00
30.00		127.33	848.85	0.00	0.00
35.00		128.08	827.21	0.00	0.00
40.00		128.19	805.56	0.00	0.00
45.00		127.77	783.91	0.00	0.00
46.50		37.88	230.95	0.00	0.00
50.00		89.47	945.87	0.00	0.00
52.50		63.44	663.93	0.00	0.00
55.00		63.12	300.69	0.00	0.00
60.00		125.67	588.40	0.00	0.00
65.00		123.88	571.08	0.00	0.00
70.00		121.83	553.76	0.00	0.00
73.50	(3) attachments	158.00	457.65	0.00	36.80
75.00		35.45	158.63	0.00	0.00
80.00		117.10	517.52	0.00	0.00
85.00		114.45	500.20	0.00	0.00
86.00	(11) attachments	830.58	2606.01	0.00	0.00
90.00		88.97	380.36	0.00	0.00
95.00		108.65	459.86	0.00	0.00
96.00	(22) attachments	1266.85	4171.39	0.00	0.00
98.50		52.71	217.94	0.00	0.00
100.00		25.60	141.82	0.00	0.00
105.00		86.20	472.74	0.00	0.00
108.00	(21) attachments	1249.64	1556.45	0.00	0.00
108.50	(1) attachments	14.88	51.17	0.00	0.00
	Totals:	**5,899.73**	**23,380.98**	**0.00**	**36.80**

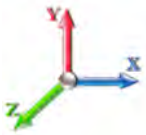
Calculated Forces

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 18

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.38	-5.91	0.00	-469.86	0.00	469.86	3275.65	1637.82	7512.12	3761.64	0.00	0.000	0.000	0.132
5.00	-22.42	-5.79	0.00	-440.34	0.00	440.34	3241.53	1620.76	7261.66	3636.23	0.02	-0.030	0.000	0.128
10.00	-21.48	-5.68	0.00	-411.37	0.00	411.37	3205.46	1602.73	7010.56	3510.49	0.06	-0.060	0.000	0.124
15.00	-20.56	-5.57	0.00	-382.97	0.00	382.97	3167.44	1583.72	6759.13	3384.59	0.14	-0.090	0.000	0.120
20.00	-19.67	-5.46	0.00	-355.11	0.00	355.11	3127.48	1563.74	6507.68	3258.68	0.25	-0.120	0.000	0.115
25.00	-18.80	-5.34	0.00	-327.82	0.00	327.82	3085.56	1542.78	6256.52	3132.91	0.40	-0.150	0.000	0.111
30.00	-17.95	-5.22	0.00	-301.12	0.00	301.12	3041.69	1520.85	6005.97	3007.45	0.57	-0.180	0.000	0.106
35.00	-17.12	-5.10	0.00	-275.02	0.00	275.02	2995.87	1497.94	5756.34	2882.45	0.77	-0.210	0.000	0.101
40.00	-16.31	-4.97	0.00	-249.54	0.00	249.54	2948.10	1474.05	5507.93	2758.06	1.01	-0.239	0.000	0.096
45.00	-15.52	-4.85	0.00	-224.67	0.00	224.67	2898.39	1449.19	5261.05	2634.44	1.28	-0.267	0.000	0.091
46.50	-15.29	-4.81	0.00	-217.40	0.00	217.40	2883.09	1441.55	5187.33	2597.52	1.36	-0.276	0.000	0.089
50.00	-14.34	-4.72	0.00	-200.55	0.00	200.55	2846.72	1423.36	5016.02	2511.74	1.57	-0.296	0.000	0.085
52.50	-13.68	-4.66	0.00	-188.75	0.00	188.75	2057.96	1028.98	3624.72	1815.05	1.73	-0.310	0.000	0.111
55.00	-13.38	-4.60	0.00	-177.10	0.00	177.10	2043.11	1021.55	3544.30	1774.78	1.90	-0.324	0.000	0.106
60.00	-12.79	-4.48	0.00	-154.10	0.00	154.10	2011.95	1005.98	3383.36	1694.19	2.25	-0.355	0.000	0.097
65.00	-12.22	-4.36	0.00	-131.71	0.00	131.71	1978.85	989.42	3222.55	1613.67	2.64	-0.385	0.000	0.088
70.00	-11.66	-4.23	0.00	-109.94	0.00	109.94	1943.79	971.90	3062.19	1533.37	3.06	-0.413	0.000	0.078
73.50	-11.20	-4.08	0.00	-95.08	0.00	95.08	1918.09	959.05	2950.37	1477.38	3.37	-0.431	0.000	0.070
75.00	-11.04	-4.04	0.00	-88.96	0.00	88.96	1906.79	953.39	2902.59	1453.45	3.51	-0.438	0.000	0.067
80.00	-10.53	-3.92	0.00	-68.75	0.00	68.75	1867.83	933.91	2744.05	1374.07	3.98	-0.460	0.000	0.056
85.00	-10.03	-3.81	0.00	-49.13	0.00	49.13	1826.92	913.46	2586.89	1295.37	4.47	-0.479	0.000	0.043
86.00	-7.43	-2.96	0.00	-45.32	0.00	45.32	1818.51	909.25	2555.66	1279.73	4.57	-0.482	0.000	0.040
90.00	-7.05	-2.87	0.00	-33.49	0.00	33.49	1784.07	892.03	2431.43	1217.52	4.98	-0.493	0.000	0.031
95.00	-6.59	-2.75	0.00	-19.16	0.00	19.16	1739.26	869.63	2277.96	1140.67	5.50	-0.503	0.000	0.021
96.00	-2.43	-1.45	0.00	-16.41	0.00	16.41	1730.06	865.03	2247.53	1125.44	5.61	-0.505	0.000	0.016
98.50	-2.21	-1.40	0.00	-12.78	0.00	12.78	1706.74	853.37	2171.89	1087.56	5.87	-0.508	0.000	0.013
98.50	-2.21	-1.40	0.00	-12.78	0.00	12.78	854.88	427.44	974.68	581.27	5.87	-0.508	0.000	0.025
100.00	-2.07	-1.37	0.00	-10.69	0.00	10.69	854.88	427.44	974.68	581.27	6.03	-0.510	0.000	0.021
105.00	-1.60	-1.28	0.00	-3.84	0.00	3.84	854.88	427.44	974.68	581.27	6.57	-0.514	0.000	0.008
108.00	-0.05	-0.02	0.00	-0.01	0.00	0.01	854.88	427.44	974.68	581.27	6.89	-0.515	0.000	0.000
108.50	0.00	-0.01	0.00	0.00	0.00	0.00	854.88	427.44	974.68	581.27	6.95	-0.515	0.000	0.000

Final Analysis Summary

Structure:	CT46140-A-SBA	**Code:**	EIA/TIA-222-G	4/28/2021	
Site Name:	S. Durham-rt 17/ Lawson	**Exposure:**	C		
Height:	108.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 98 mph Wind	25.2	0.00	28.03	0.00	0.00	2010.59
0.9D + 1.6W 98 mph Wind	25.2	0.00	21.01	0.00	0.00	2002.54
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.0	0.00	47.12	0.00	0.00	537.01
1.2D + 1.0E	0.8	0.00	28.06	0.00	0.00	66.39
0.9D + 1.0E	0.8	0.00	21.04	0.00	0.00	66.11
1.0D + 1.0W 60 mph Wind	5.9	0.00	23.38	0.00	0.00	469.86

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 98 mph Wind	-28.03	-25.21	0.00	-2010.5	0.00	-2010.5	3275.65	1637.8	7512.12	3761.64	0.00	0.543
0.9D + 1.6W 98 mph Wind	-21.01	-25.21	0.00	-2002.5	0.00	-2002.5	3275.65	1637.8	7512.12	3761.64	0.00	0.539
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-47.12	-6.97	0.00	-537.01	0.00	-537.01	3275.65	1637.8	7512.12	3761.64	0.00	0.157
1.2D + 1.0E	-28.06	-0.76	0.00	-66.39	0.00	-66.39	3275.65	1637.8	7512.12	3761.64	0.00	0.026
0.9D + 1.0E	-21.04	-0.76	0.00	-66.11	0.00	-66.11	3275.65	1637.8	7512.12	3761.64	0.00	0.024
1.0D + 1.0W 60 mph Wind	-23.38	-5.91	0.00	-469.86	0.00	-469.86	3275.65	1637.8	7512.12	3761.64	0.00	0.132

Base Plate Summary

Structure:	CT46140-A-SB		**Code:**	EIA/TIA-222-G	4/28/2021
Site Name:	S. Durham-rt 17/ Lawson		**Exposure:**	C	
Height:	108.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	2596.40
Axial (kip):	24.00
Shear (kip):	28.50
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	2010.59
Axial (kip):	28.03
Shear (kip):	25.21

Base Plate	
Yield (ksi):	60.00
Width (in):	71.00
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	32.34
Moment (kip-in):	574.45
Allow Stress (ksi):	81.00
Applied Stress (ksi):	46.98
Stress Ratio:	0.58

Anchor Bolts	
Bolt Circle:	65.00
Number Bolts:	12.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	127.66
Allowable (kip):	260.00
Ratio:	0.51
Tension	
Force (kip):	119.80
Allowable (kip):	260.00
Ratio:	0.48

Monopole Mat Foundation Design

			Date: 4/28/2021
Customer Name:	Dish Wireless	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	108.5
Site Number:	CT46140-A-SBA	**Engineer Name:**	D. Zhou
Engr. Number:	106851	**Engineer Login ID:**	

Foundation Info Obtained from: Mapping Operation

Structure Type: Monopole

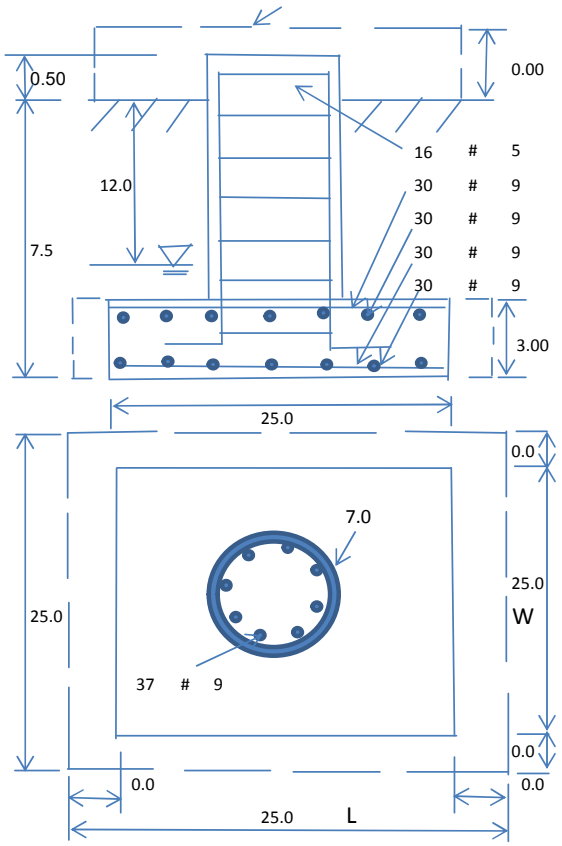
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	28.0	Shear Force (Kips):	25.2
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2010.6
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	7.5
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	3.00
Length of Pad (ft.):	25	Width of Pad (ft.):	25
Final Length of pad (ft)	25.0	Final width of pad (ft):	25.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	37	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	12.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	2639.32	Total Dry Soil Weight (Kips):	290.33
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	290.33	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2067.42	Total Dry Concrete Weight (Kips):	310.11
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	310.11	Total Vertical Load on Base (Kips):	628.44

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1673	<	Allowable Factored Soil Bearing (psf):	9000	0.19	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7104.9	>	Design Factored Momont (kips-ft):	2212	0.31	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.21	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75			
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00			
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.00		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	5899.1	>	Design Factored Moment (Mu, Kips-F	2136.6	0.36	OK!
Calculated Shear Capacity (Kips):	871.9	>	Design Factored Shear (Kips):	25.2	0.03	OK!
Calculated Tension Capacity (Tn, Kips):	1998.0	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7299.3	>	Design Factored Axial Load (Pu Kips):	28.0	0.00	OK!
Moment & Axial Strength Combination:	0.36	OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.007		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	799.5	>	One-Way Factored Shear (L-D. Kips):	165.5	0.21	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	799.5	>	One-Way Factored Shear (W-D., Kips)	165.5	0.21	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	733.9	>	One-Way Factored Shear (C-C, Kips):	149.1	0.20	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0031	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0031		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	4220.2	>	Moment at Bottom (L-Dir. K-Ft):	936.2	0.22	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	4220.2	>	Moment at Bottom (W-Dir. K-Ft):	936.2	0.22	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	5912.9	>	Moment at Bottom (C-C Dir. K-Ft):	1324.0	0.22	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0031	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0031		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	4220.2	>	Moment at the top (L-Dir K-Ft):	357.5	0.08	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	4220.2	>	Moment at the top (W-Dir K-Ft):	357.5	0.08	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	5912.9	>	Moment at the top (C-C Dir. K-Ft):	335.4	0.06	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	804.2	k-ft.	Max. factored shear stress v_{u_CD}:		2.0	Psi
Max. factored shear stress v_{u_AB}:	5.7	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	5.7	Psi	Check Usage of Punching Shear Capacity:		0.03	OK!

EXHIBIT 9

Antenna Mount Analysis

May 17, 2021

Sherri Knapik
SBA Communications Corporation
134 Flanders Road, Suite 125
Westborough, MA 01581
(508) 251-0720 x 3805

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject:	**Appurtenance Mount Analysis Report**	
Carrier Designation:	***Dish Wireless* Co-Locate**	
	Site Number:	BOBDL00138A
	Site Name:	N/A
***SBA Network Services Designation*:**	**Site Number:**	CT46140-A
	Site Name:	S. Durham-rt 17/ Lawson
	Application Number:	153564, v1
Engineering Firm Designation:	**B+T Group Project Number:**	149488.003.01 Rev A
Site Data:	**128 R Creamery Road, Durham, CT, 06422, Middlesex County** **Latitude *41.44135*°, Longitude *-72.69614*°** **Monopole** **8' Platform Mount**	

Dear Ms. Knapik,

B+T Group is pleased to submit this **"Appurtenance Mount Analysis Report"** to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

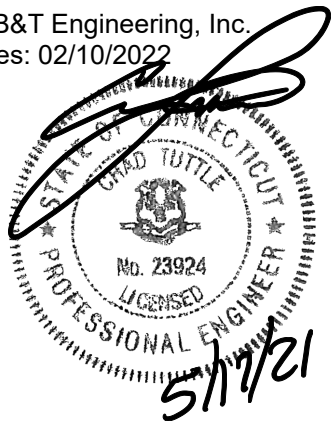
Proposed Equipment Note: See Table 1 for the final loading configuration	**Sufficient Capacity** **(Passing at 46.1%)**

The jurisdiction has adopted the 2015 International Building Code. This analysis has been performed in accordance with the ANSI/TIA-222-H Standard.

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and *SBA Communications Corporation.* If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Nitin K Manjunath

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2022



Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

The mount consists of SitePro1 platform mount (Part #SNP8HR-396) at 86 ft., attached to monopole at 128 R Creamery Road, Durham, CT, 06422, Middlesex County. The proposed antenna loading information was obtained from SBA Communications Corporation. All information provided to B+T Group was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 120 mph with no ice and 50 mph with 1-inch escalated ice thickness. Exposure Category C, Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30º increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	86	1	3	JMA MX08FRO665-21	1
			3	Fujitsu TA08025-B605	2
			3	Fujitsu TA08025-B604	
		--	1	Raycap RDIDC-9181-PF-48	3

Note:
(1) Proposed Antenna to be installed on the proposed Mount Pipe.
(2) Proposed Equipment to be installed directly behind the Antenna.
(3) Proposed Equipment to be installed on the Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
SBA Colo App	Proposed Loading	Date: 03/31/2021	SBA Communications Corporation
RFDS		Date: 03/28/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

Manufacturer's drawing was used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

The following assumptions have been included in the analysis of the mount.

Component	Section	Length	Note
Antenna Mounting Pipes	2" Std. Pipe	8'-0''	All Positions, All Sectors

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The following material grades were assumed (Unless Noted Otherwise):
   a) Connection Bolts : ASTM A325
   b) Steel Pipe : ASTM A53 (GR. 35)
   c) HSS (Round) : ASTM 500 (GR. B-42)
   d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   e) Channel : ASTM A36 (GR. 36)
   f) Steel Solid Rod : ASTM A36 (GR. 36)
   g) Steel Plate : ASTM A36 (GR. 36)
   h) Steel Angle : ASTM A36 (GR. 36)
   i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

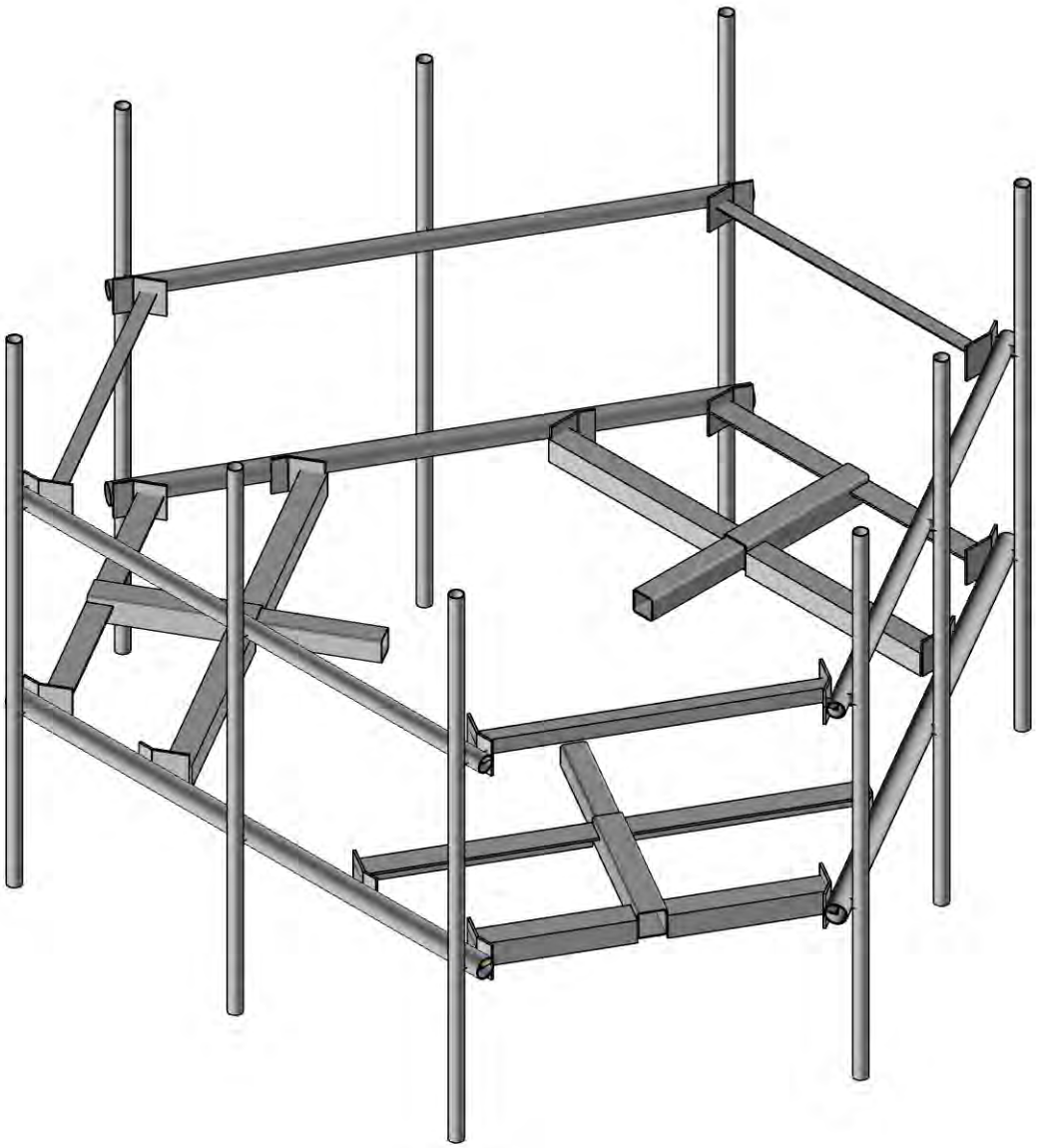
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Face Horizontals	86	11.3	Pass
-	Support Tubes	86	34.1	Pass
-	Support Angles	86	40.9	Pass
-	Connection Plates	86	45.6	Pass
-	Support Rails	86	22.0	Pass
-	Mount Pipes	86	45.6	Pass
-	Connection Angles	86	24.2	Pass
-	Connection Bolts	86	33.06	Pass

5) RECOMMENDATIONS

The SitePro1 platform mount, Part #SNP8HR-396 has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-H standard for the proposed loading. (Refer to the RISA output for the specific members).

APPENDIX A

(RISA-3D Output)



Envelope Only Solution

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KR		May 17, 2021
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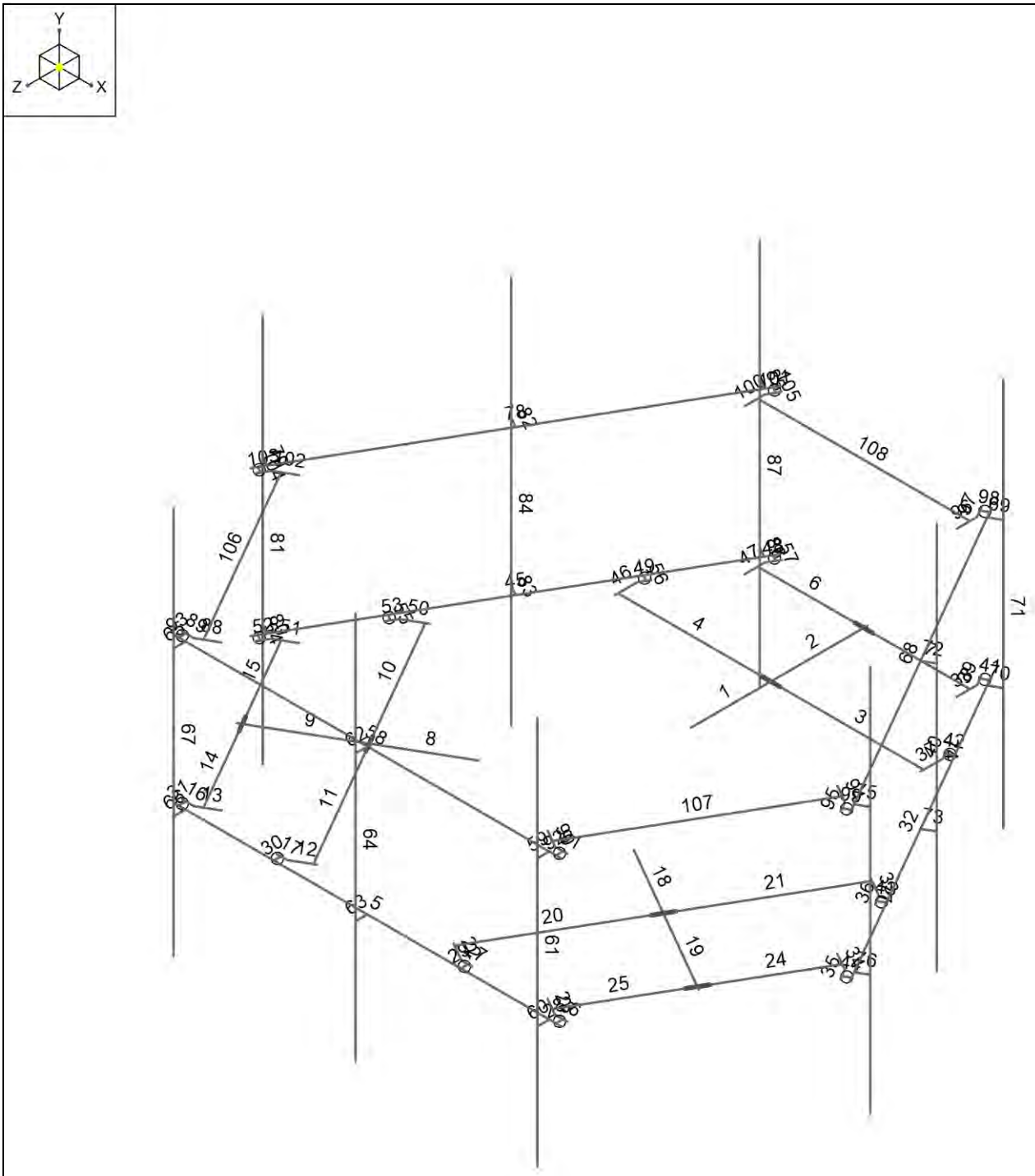

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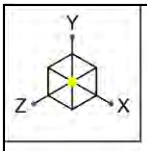

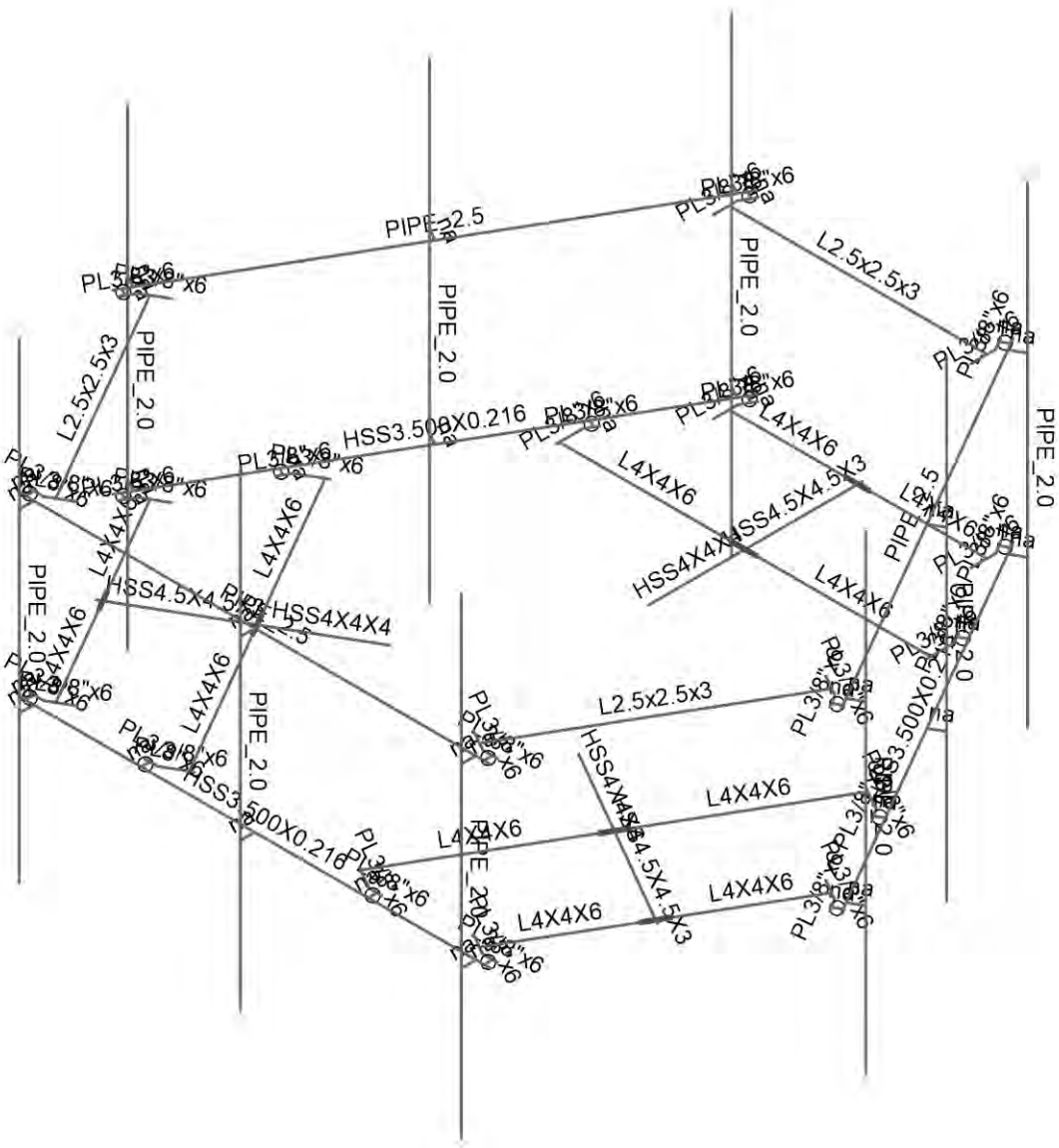

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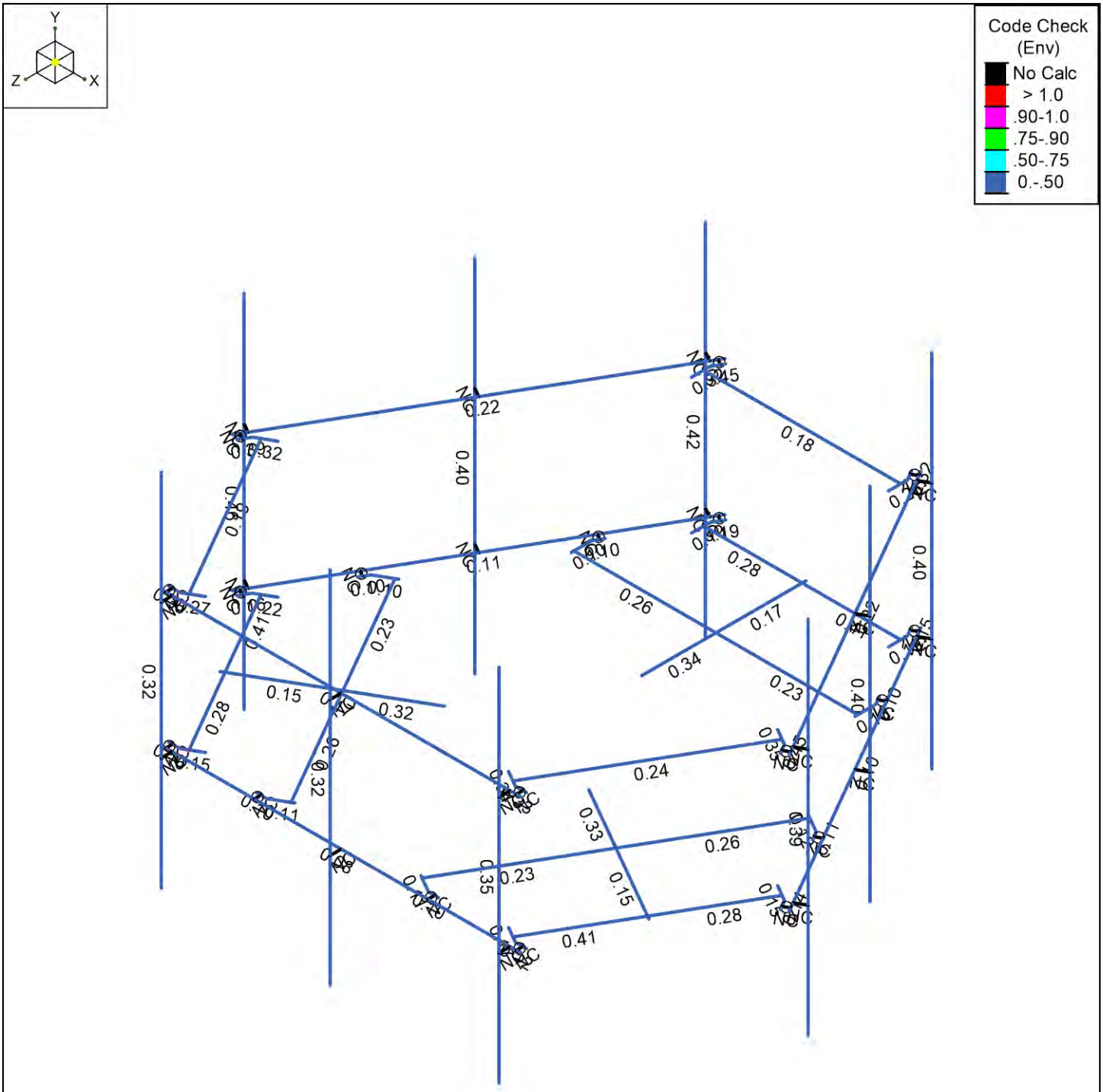

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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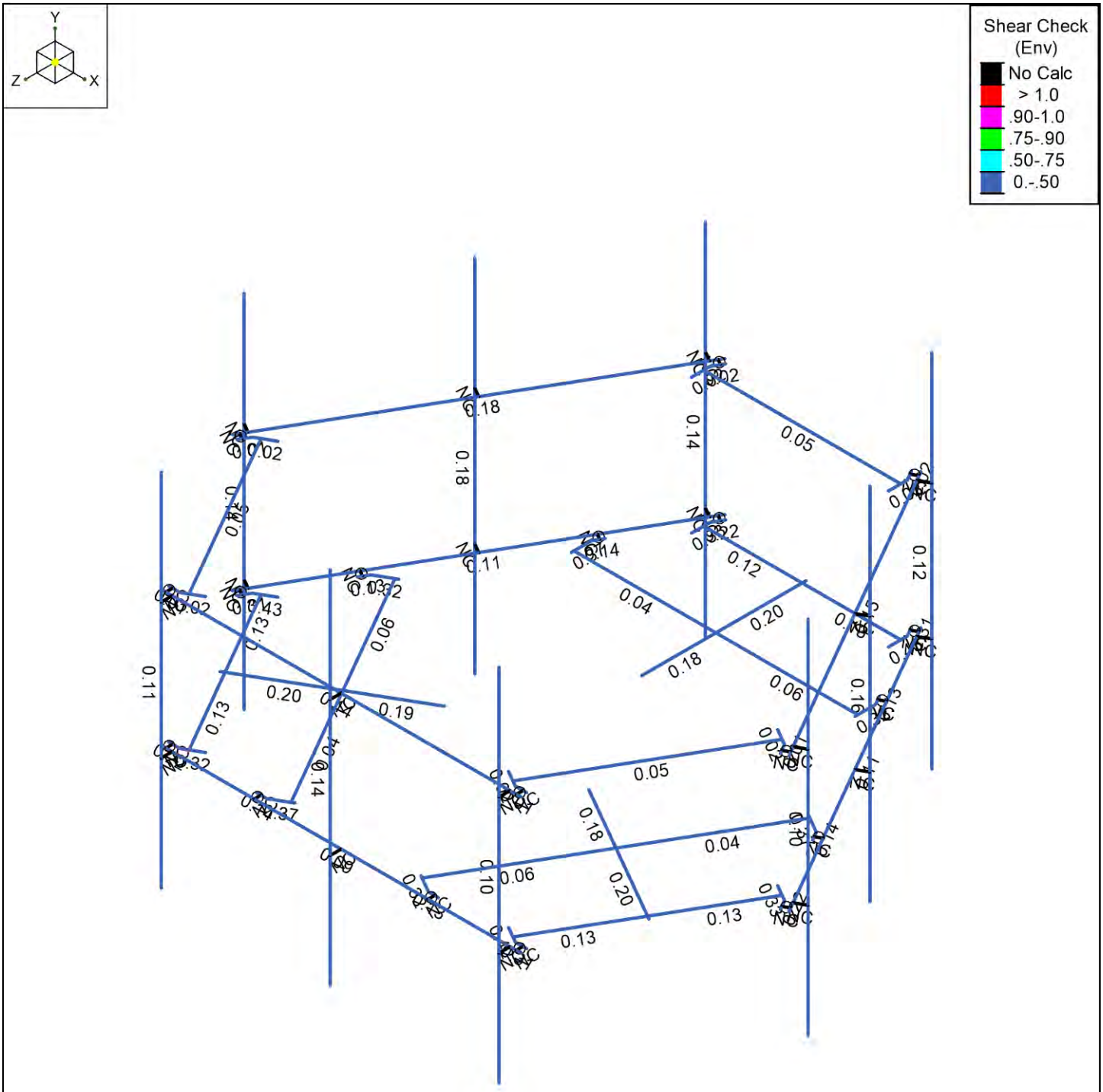

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT46140-A - S. Durham-rt 17/ Lawson	SK-5
KR		May 17, 2021
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Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	MF-H1	HSS3.500X0.216	Beam	HSS Pipe	A500 Gr.B RND	Typical	2.08	2.84	2.84	5.69
2	SF-H1	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
3	SF-H2	HSS4.5X4.5X3	Beam	Tube	A500 Gr.B Rect	Typical	2.93	9.02	9.02	14.4
4	SF-H3	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical	2.86	4.32	4.32	0.141
5	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
6	MF-H2	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
7	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	C-A1	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	92	1		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	2	1		SF-H2	Beam	Tube	A500 Gr.B Rect	Typical
3	3	5	3	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
4	4	3	4	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
5	5	6	7		MF-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
6	6	9	8	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
7	7	8	10	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
8	8	93	11		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
9	9	12	11		SF-H2	Beam	Tube	A500 Gr.B Rect	Typical
10	10	15	13	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	13	14	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
12	12	17	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
13	13	16	18		MF-CP1	Beam	RECT	A36 Gr.36	Typical
14	14	21	20	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
15	15	20	22	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
16	16	18	23		MF-CP1	Beam	RECT	A36 Gr.36	Typical
17	17	19	24		MF-CP1	Beam	RECT	A36 Gr.36	Typical
18	18	94	27		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
19	19	28	27		SF-H2	Beam	Tube	A500 Gr.B Rect	Typical
20	20	31	29	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
21	21	29	30	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
22	22	33	35		MF-CP1	Beam	RECT	A36 Gr.36	Typical
23	23	32	34		MF-CP1	Beam	RECT	A36 Gr.36	Typical
24	24	37	36	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
25	25	36	38	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
26	26	34	39		MF-CP1	Beam	RECT	A36 Gr.36	Typical
27	27	35	40		MF-CP1	Beam	RECT	A36 Gr.36	Typical
28	28	41	45		RIGID	None	None	RIGID	Typical
29	29	42	46		RIGID	None	None	RIGID	Typical
30	30	26	44		RIGID	None	None	RIGID	Typical
31	31	25	43		RIGID	None	None	RIGID	Typical
32	32	47	48		MF-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
33	33	50	52		MF-CP1	Beam	RECT	A36 Gr.36	Typical
34	34	49	51		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	51	53		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	52	54		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	58	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	57	59		MF-CP1	Beam	RECT	A36 Gr.36	Typical
39	39	59	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
40	40	60	62		MF-CP1	Beam	RECT	A36 Gr.36	Typical
41	41	63	67		RIGID	None	None	RIGID	Typical
42	42	64	68		RIGID	None	None	RIGID	Typical
43	43	56	66		RIGID	None	None	RIGID	Typical
44	44	55	65		RIGID	None	None	RIGID	Typical
45	45	69	70		MF-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
46	46	72	74		MF-CP1	Beam	RECT	A36 Gr.36	Typical
47	47	71	73		MF-CP1	Beam	RECT	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
48	48	73	75		MF-CP1	Beam	RECT	A36 Gr.36	Typical
49	49	74	76		MF-CP1	Beam	RECT	A36 Gr.36	Typical
50	50	80	82		MF-CP1	Beam	RECT	A36 Gr.36	Typical
51	51	79	81		MF-CP1	Beam	RECT	A36 Gr.36	Typical
52	52	81	83		MF-CP1	Beam	RECT	A36 Gr.36	Typical
53	53	82	84		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	85	89		RIGID	None	None	RIGID	Typical
55	55	86	90		RIGID	None	None	RIGID	Typical
56	56	78	88		RIGID	None	None	RIGID	Typical
57	57	77	87		RIGID	None	None	RIGID	Typical
58	58	95	96		MF-H2	Beam	Pipe	A53 Gr.B	Typical
59	59	99	100		RIGID	None	None	RIGID	Typical
60	60	97	98		RIGID	None	None	RIGID	Typical
61	61	101	102		MF-P1	Column	Pipe	A53 Gr.B	Typical
62	62	105	106		RIGID	None	None	RIGID	Typical
63	63	103	104		RIGID	None	None	RIGID	Typical
64	64	107	108		MF-P1	Column	Pipe	A53 Gr.B	Typical
65	65	111	112		RIGID	None	None	RIGID	Typical
66	66	109	110		RIGID	None	None	RIGID	Typical
67	67	113	114		MF-P1	Column	Pipe	A53 Gr.B	Typical
68	68	115	116		MF-H2	Beam	Pipe	A53 Gr.B	Typical
69	69	119	120		RIGID	None	None	RIGID	Typical
70	70	117	118		RIGID	None	None	RIGID	Typical
71	71	121	122		MF-P1	Column	Pipe	A53 Gr.B	Typical
72	72	125	126		RIGID	None	None	RIGID	Typical
73	73	123	124		RIGID	None	None	RIGID	Typical
74	74	127	128		MF-P1	Column	Pipe	A53 Gr.B	Typical
75	75	131	132		RIGID	None	None	RIGID	Typical
76	76	129	130		RIGID	None	None	RIGID	Typical
77	77	133	134		MF-P1	Column	Pipe	A53 Gr.B	Typical
78	78	135	136		MF-H2	Beam	Pipe	A53 Gr.B	Typical
79	79	139	140		RIGID	None	None	RIGID	Typical
80	80	137	138		RIGID	None	None	RIGID	Typical
81	81	141	142		MF-P1	Column	Pipe	A53 Gr.B	Typical
82	82	145	146		RIGID	None	None	RIGID	Typical
83	83	143	144		RIGID	None	None	RIGID	Typical
84	84	147	148		MF-P1	Column	Pipe	A53 Gr.B	Typical
85	85	151	152		RIGID	None	None	RIGID	Typical
86	86	149	150		RIGID	None	None	RIGID	Typical
87	87	153	154		MF-P1	Column	Pipe	A53 Gr.B	Typical
88	88	155	156		MF-CP1	Beam	RECT	A36 Gr.36	Typical
89	89	156	158		MF-CP1	Beam	RECT	A36 Gr.36	Typical
90	90	160	161		MF-CP1	Beam	RECT	A36 Gr.36	Typical
91	91	161	163		MF-CP1	Beam	RECT	A36 Gr.36	Typical
92	92	164	166		RIGID	None	None	RIGID	Typical
93	93	159	165		RIGID	None	None	RIGID	Typical
94	94	167	168		MF-CP1	Beam	RECT	A36 Gr.36	Typical
95	95	168	170		MF-CP1	Beam	RECT	A36 Gr.36	Typical
96	96	172	173		MF-CP1	Beam	RECT	A36 Gr.36	Typical
97	97	173	175		MF-CP1	Beam	RECT	A36 Gr.36	Typical
98	98	176	178		RIGID	None	None	RIGID	Typical
99	99	171	177		RIGID	None	None	RIGID	Typical
100	100	179	180		MF-CP1	Beam	RECT	A36 Gr.36	Typical
101	101	180	182		MF-CP1	Beam	RECT	A36 Gr.36	Typical
102	102	184	185		MF-CP1	Beam	RECT	A36 Gr.36	Typical
103	103	185	187		MF-CP1	Beam	RECT	A36 Gr.36	Typical
104	104	188	190		RIGID	None	None	RIGID	Typical
105	105	183	189		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
106	106	186	157	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical
107	107	162	169	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical
108	108	174	181	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	-0.	0	-3.41593	
2	2	-0.	0	-5.49923	
3	3	-0.	0	-3.49923	
4	4	-3.151	0	-3.49923	
5	5	3.151	0	-3.49923	
6	6	-3.999663	0	4.82111	
7	7	4.000337	0	4.82111	
8	8	-0.	0	-5.41593	
9	9	-2.1875	0	-5.41593	
10	10	2.1875	0	-5.41593	
11	11	-2.958282	0	1.707965	
12	12	-4.762473	0	2.749615	
13	13	-3.030422	0	1.749615	
14	14	-1.454922	0	4.478461	
15	15	-4.605922	0	-0.979231	
16	16	-3.362035	0	4.466979	
17	17	-1.400737	0	4.447178	
18	18	-3.722882	0	4.675314	
19	19	-1.795882	0	4.675314	
20	20	-4.690333	0	2.707965	
21	21	-3.596583	0	4.602396	
22	22	-5.784083	0	0.813534	
23	23	-3.972882	0	4.675314	
24	24	-2.011584	0	4.67531	
25	25	-3.889582	0	4.675314	
26	26	-1.928284	0	4.675314	
27	27	2.958282	0	1.707965	
28	28	4.762473	0	2.749615	
29	29	3.030422	0	1.749615	
30	30	4.605922	0	-0.979231	
31	31	1.454922	0	4.478461	
32	32	3.362035	0	4.466979	
33	33	1.400737	0	4.447178	
34	34	3.722882	0	4.675314	
35	35	1.795882	0	4.675314	
36	36	4.690333	0	2.707965	
37	37	5.784083	0	0.813534	
38	38	3.596583	0	4.602396	
39	39	3.972882	0	4.675314	
40	40	2.011584	0	4.67531	
41	41	3.889582	0	4.675314	
42	42	1.928284	0	4.675314	
43	43	-3.889582	0	4.82111	
44	44	-1.928284	0	4.82111	
45	45	3.889582	0	4.82111	
46	46	1.928284	0	4.82111	
47	47	6.175035	0	1.053254	
48	48	2.175035	0	-5.874949	
49	49	5.549535	0	0.678118	
50	50	4.551737	0	-1.010515	
51	51	5.910382	0	0.886453	
52	52	4.946882	0	-0.782378	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
53	53	6.035382	0	1.102959	
54	54	5.054729	0	-0.595572	
55	55	5.993732	0	1.030819	
56	56	5.013081	0	-0.667713	
57	57	2.1875	0	-5.145097	
58	58	3.151	0	-3.436663	
59	59	2.1875	0	-5.561767	
60	60	3.151	0	-3.892936	
61	61	2.0625	0	-5.778273	
62	62	3.043145	0	-4.079738	
63	63	2.10415	0	-5.706133	
64	64	3.084797	0	-4.007599	
65	65	6.119994	0	0.957921	
66	66	5.139346	0	-0.740612	
67	67	2.230413	0	-5.779031	
68	68	3.211062	0	-4.080498	
69	69	-2.175372	0	-5.874364	
70	70	-6.175372	0	1.053839	
71	71	-2.1875	0	-5.145097	
72	72	-3.151	0	-3.436663	
73	73	-2.1875	0	-5.561767	
74	74	-3.151	0	-3.892936	
75	75	-2.0625	0	-5.778273	
76	76	-3.043145	0	-4.079738	
77	77	-2.10415	0	-5.706133	
78	78	-3.084796	0	-4.007599	
79	79	-5.549535	0	0.678118	
80	80	-4.551737	0	-1.010515	
81	81	-5.910382	0	0.886453	
82	82	-4.946882	0	-0.782378	
83	83	-6.035382	0	1.102959	
84	84	-5.054729	0	-0.595572	
85	85	-5.993732	0	1.030819	
86	86	-5.013081	0	-0.667713	
87	87	-2.230413	0	-5.779031	
88	88	-3.211062	0	-4.080498	
89	89	-6.119994	0	0.957921	
90	90	-5.139346	0	-0.740612	
91	91	0	0	-0.	
92	92	0	0	-1.85044	
93	93	-1.602528	0	0.92522	
94	94	1.602528	0	0.92522	
95	95	-3.999663	3	4.82111	
96	96	4.000337	3	4.82111	
97	97	3.750337	0	4.82111	
98	98	3.750337	0	5.065902	
99	99	3.750337	3	4.82111	
100	100	3.750337	3	5.065902	
101	101	3.750337	5.5	5.065902	
102	102	3.750337	-2.5	5.065902	
103	103	0.000337	0	4.82111	
104	104	0.000337	0	5.065902	
105	105	0.000337	3	4.82111	
106	106	0.000337	3	5.065902	
107	107	0.000337	5.5	5.065902	
108	108	0.000337	-2.5	5.065902	
109	109	-3.749663	0	4.82111	
110	110	-3.749663	0	5.065902	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	-3.749663	3	4.82111	
112	112	-3.749663	3	5.065902	
113	113	-3.749663	5.5	5.065902	
114	114	-3.749663	-2.5	5.065902	
115	115	6.175035	3	1.053254	
116	116	2.175035	3	-5.874949	
117	117	2.300035	0	-5.658442	
118	118	2.512031	0	-5.780838	
119	119	2.300035	3	-5.658442	
120	120	2.512031	3	-5.780838	
121	121	2.512031	5.5	-5.780838	
122	122	2.512031	-2.5	-5.780838	
123	123	4.175035	0	-2.410847	
124	124	4.387031	0	-2.533243	
125	125	4.175035	3	-2.410847	
126	126	4.387031	3	-2.533243	
127	127	4.387031	5.5	-2.533243	
128	128	4.387031	-2.5	-2.533243	
129	129	6.050035	0	0.836748	
130	130	6.262031	0	0.714352	
131	131	6.050035	3	0.836748	
132	132	6.262031	3	0.714352	
133	133	6.262031	5.5	0.714352	
134	134	6.262031	-2.5	0.714352	
135	135	-2.175372	3	-5.874364	
136	136	-6.175372	3	1.053839	
137	137	-6.050372	0	0.837332	
138	138	-6.262368	0	0.714937	
139	139	-6.050372	3	0.837332	
140	140	-6.262368	3	0.714937	
141	141	-6.262368	5.5	0.714937	
142	142	-6.262368	-2.5	0.714937	
143	143	-4.175372	0	-2.410263	
144	144	-4.387368	0	-2.532659	
145	145	-4.175372	3	-2.410263	
146	146	-4.387368	3	-2.532659	
147	147	-4.387368	5.5	-2.532659	
148	148	-4.387368	-2.5	-2.532659	
149	149	-2.300372	0	-5.657858	
150	150	-2.512368	0	-5.780254	
151	151	-2.300372	3	-5.657858	
152	152	-2.512368	3	-5.780254	
153	153	-2.512368	5.5	-5.780254	
154	154	-2.512368	-2.5	-5.780254	
155	155	-3.362035	3	4.466979	
156	156	-3.722882	3	4.675314	
157	157	-3.596583	3	4.602396	
158	158	-3.972882	3	4.675314	
159	159	-3.889582	3	4.675314	
160	160	3.362035	3	4.466979	
161	161	3.722882	3	4.675314	
162	162	3.596583	3	4.602396	
163	163	3.972882	3	4.675314	
164	164	3.889582	3	4.675314	
165	165	-3.889582	3	4.82111	
166	166	3.889582	3	4.82111	
167	167	5.549535	3	0.678118	
168	168	5.910382	3	0.886453	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
169	169	5.784083	3	0.813534	
170	170	6.035382	3	1.102959	
171	171	5.993732	3	1.030819	
172	172	2.1875	3	-5.145097	
173	173	2.1875	3	-5.561767	
174	174	2.1875	3	-5.41593	
175	175	2.0625	3	-5.778273	
176	176	2.10415	3	-5.706133	
177	177	6.119994	3	0.957921	
178	178	2.230413	3	-5.779031	
179	179	-2.1875	3	-5.145097	
180	180	-2.1875	3	-5.561767	
181	181	-2.1875	3	-5.41593	
182	182	-2.0625	3	-5.778273	
183	183	-2.10415	3	-5.706133	
184	184	-5.549535	3	0.678118	
185	185	-5.910382	3	0.886453	
186	186	-5.784083	3	0.813534	
187	187	-6.035382	3	1.102959	
188	188	-5.993732	3	1.030819	
189	189	-2.230413	3	-5.779031	
190	190	-6.119994	3	0.957921	
191	N191	0	0	-1.4348	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	93	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	92	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	94	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	Y	-0.032	%15
2	61	Y	-0.032	%85
3	61	Y	-0.075	%20
4	61	Y	-0.064	%50
5	61	Y	0	0
6	81	Y	-0.032	%15
7	81	Y	-0.032	%85
8	81	Y	-0.075	%20
9	81	Y	-0.064	%50
10	81	Y	0	0
11	71	Y	-0.032	%15
12	71	Y	-0.032	%85
13	71	Y	-0.075	%20
14	71	Y	-0.064	%50
15	71	Y	0	0
16	8	Y	-0.022	%50
17	8	Y	0	0
18	8	Y	0	0
19	8	Y	0	0
20	8	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	Z	-0.169	%15
2	61	Z	-0.169	%85

Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
3	61	Z	-0.075	%20
4	61	Z	-0.075	%50
5	61	Z	0	0
6	81	Z	-0.169	%15
7	81	Z	-0.169	%85
8	81	Z	-0.075	%20
9	81	Z	-0.075	%50
10	81	Z	0	0
11	71	Z	-0.169	%15
12	71	Z	-0.169	%85
13	71	Z	-0.075	%20
14	71	Z	-0.075	%50
15	71	Z	0	0
16	8	Z	-0.077	%50
17	8	Z	0	0
18	8	Z	0	0
19	8	Z	0	0
20	8	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	X	-0.068	%15
2	61	X	-0.068	%85
3	61	X	-0.045	%20
4	61	X	-0.039	%50
5	61	X	0	0
6	81	X	-0.068	%15
7	81	X	-0.068	%85
8	81	X	-0.045	%20
9	81	X	-0.039	%50
10	81	X	0	0
11	71	X	-0.068	%15
12	71	X	-0.068	%85
13	71	X	-0.045	%20
14	71	X	-0.039	%50
15	71	X	0	0
16	8	X	-0.043	%50
17	8	X	0	0
18	8	X	0	0
19	8	X	0	0
20	8	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	Z	-0.033	%15
2	61	Z	-0.033	%85
3	61	Z	-0.013	%20
4	61	Z	-0.013	%50
5	61	Z	0	0
6	81	Z	-0.033	%15
7	81	Z	-0.033	%85
8	81	Z	-0.013	%20
9	81	Z	-0.013	%50
10	81	Z	0	0
11	71	Z	-0.033	%15
12	71	Z	-0.033	%85
13	71	Z	-0.013	%20

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
14	71	Z	-0.013	%50
15	71	Z	0	0
16	8	Z	-0.013	%50
17	8	Z	0	0
18	8	Z	0	0
19	8	Z	0	0
20	8	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	X	-0.015	%15
2	61	X	-0.015	%85
3	61	X	-0.008	%20
4	61	X	-0.007	%50
5	61	X	0	0
6	81	X	-0.015	%15
7	81	X	-0.015	%85
8	81	X	-0.008	%20
9	81	X	-0.007	%50
10	81	X	0	0
11	71	X	-0.015	%15
12	71	X	-0.015	%85
13	71	X	-0.008	%20
14	71	X	-0.007	%50
15	71	X	0	0
16	8	X	-0.007	%50
17	8	X	0	0
18	8	X	0	0
19	8	X	0	0
20	8	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	Z	-0.011	%15
2	61	Z	-0.011	%85
3	61	Z	-0.005	%20
4	61	Z	-0.005	%50
5	61	Z	0	0
6	81	Z	-0.011	%15
7	81	Z	-0.011	%85
8	81	Z	-0.005	%20
9	81	Z	-0.005	%50
10	81	Z	0	0
11	71	Z	-0.011	%15
12	71	Z	-0.011	%85
13	71	Z	-0.005	%20
14	71	Z	-0.005	%50
15	71	Z	0	0
16	8	Z	-0.005	%50
17	8	Z	0	0
18	8	Z	0	0
19	8	Z	0	0
20	8	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	X	-0.004	%15
2	61	X	-0.004	%85
3	61	X	-0.003	%20
4	61	X	-0.003	%50
5	61	X	0	0
6	81	X	-0.004	%15
7	81	X	-0.004	%85
8	81	X	-0.003	%20
9	81	X	-0.003	%50
10	81	X	0	0
11	71	X	-0.004	%15
12	71	X	-0.004	%85
13	71	X	-0.003	%20
14	71	X	-0.003	%50
15	71	X	0	0
16	8	X	-0.003	%50
17	8	X	0	0
18	8	X	0	0
19	8	X	0	0
20	8	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	Y	-0.118	%15
2	61	Y	-0.118	%85
3	61	Y	-0.033	%20
4	61	Y	-0.032	%50
5	61	Y	0	0
6	81	Y	-0.118	%15
7	81	Y	-0.118	%85
8	81	Y	-0.033	%20
9	81	Y	-0.032	%50
10	81	Y	0	0
11	71	Y	-0.118	%15
12	71	Y	-0.118	%85
13	71	Y	-0.033	%20
14	71	Y	-0.032	%50
15	71	Y	0	0
16	8	Y	-0.033	%50
17	8	Y	0	0
18	8	Y	0	0
19	8	Y	0	0
20	8	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	Z	-0.016	%15
2	61	Z	-0.016	%85
3	61	Z	-0.018	%20
4	61	Z	-0.015	%50
5	61	Z	0	0
6	81	Z	-0.016	%15
7	81	Z	-0.016	%85
8	81	Z	-0.018	%20
9	81	Z	-0.015	%50
10	81	Z	0	0
11	71	Z	-0.016	%15

Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
12	71	Z	-0.016	%85
13	71	Z	-0.018	%20
14	71	Z	-0.015	%50
15	71	Z	0	0
16	8	Z	-0.005	%50
17	8	Z	0	0
18	8	Z	0	0
19	8	Z	0	0
20	8	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	X	-0.016	%15
2	61	X	-0.016	%85
3	61	X	-0.018	%20
4	61	X	-0.015	%50
5	61	X	0	0
6	81	X	-0.016	%15
7	81	X	-0.016	%85
8	81	X	-0.018	%20
9	81	X	-0.015	%50
10	81	X	0	0
11	71	X	-0.016	%15
12	71	X	-0.016	%85
13	71	X	-0.018	%20
14	71	X	-0.015	%50
15	71	X	0	0
16	8	X	-0.005	%50
17	8	X	0	0
18	8	X	0	0
19	8	X	0	0
20	8	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	58	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	5	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	68	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	32	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	78	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	45	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	58	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	5	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	68	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	32	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	78	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	45	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	Y	-0.25	%5

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	19	Y	-0.25	%5

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%5

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.016	-0.016	0	%100
2	2	Z	-0.019	-0.019	0	%100
3	3	Z	-0.018	-0.018	0	%100
4	4	Z	-0.018	-0.018	0	%100
5	5	Z	-0.013	-0.013	0	%100
6	6	Z	-0.017	-0.017	0	%100
7	7	Z	-0.017	-0.017	0	%100
8	8	Z	-0.016	-0.016	0	%100
9	9	Z	-0.019	-0.019	0	%100
10	10	Z	-0.018	-0.018	0	%100
11	11	Z	-0.018	-0.018	0	%100
12	12	Z	-0.023	-0.023	0	%100
13	13	Z	-0.023	-0.023	0	%100

Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
14	14	Z	-0.017	-0.017	0	%100
15	15	Z	-0.017	-0.017	0	%100
16	16	Z	-0.023	-0.023	0	%100
17	17	Z	-0.023	-0.023	0	%100
18	18	Z	-0.016	-0.016	0	%100
19	19	Z	-0.019	-0.019	0	%100
20	20	Z	-0.018	-0.018	0	%100
21	21	Z	-0.018	-0.018	0	%100
22	22	Z	-0.023	-0.023	0	%100
23	23	Z	-0.023	-0.023	0	%100
24	24	Z	-0.017	-0.017	0	%100
25	25	Z	-0.017	-0.017	0	%100
26	26	Z	-0.023	-0.023	0	%100
27	27	Z	-0.023	-0.023	0	%100
28	32	Z	-0.013	-0.013	0	%100
29	33	Z	-0.023	-0.023	0	%100
30	34	Z	-0.023	-0.023	0	%100
31	35	Z	-0.023	-0.023	0	%100
32	36	Z	-0.023	-0.023	0	%100
33	37	Z	-0.023	-0.023	0	%100
34	38	Z	-0.023	-0.023	0	%100
35	39	Z	-0.023	-0.023	0	%100
36	40	Z	-0.023	-0.023	0	%100
37	45	Z	-0.013	-0.013	0	%100
38	46	Z	-0.023	-0.023	0	%100
39	47	Z	-0.023	-0.023	0	%100
40	48	Z	-0.023	-0.023	0	%100
41	49	Z	-0.023	-0.023	0	%100
42	50	Z	-0.023	-0.023	0	%100
43	51	Z	-0.023	-0.023	0	%100
44	52	Z	-0.023	-0.023	0	%100
45	53	Z	-0.023	-0.023	0	%100
46	58	Z	-0.011	-0.011	0	%100
47	61	Z	-0.009	-0.009	0	%100
48	64	Z	-0.009	-0.009	0	%100
49	67	Z	-0.009	-0.009	0	%100
50	68	Z	-0.011	-0.011	0	%100
51	71	Z	-0.009	-0.009	0	%100
52	74	Z	-0.009	-0.009	0	%100
53	77	Z	-0.009	-0.009	0	%100
54	78	Z	-0.011	-0.011	0	%100
55	81	Z	-0.009	-0.009	0	%100
56	84	Z	-0.009	-0.009	0	%100
57	87	Z	-0.009	-0.009	0	%100
58	88	Z	-0.023	-0.023	0	%100
59	89	Z	-0.023	-0.023	0	%100
60	90	Z	-0.023	-0.023	0	%100
61	91	Z	-0.023	-0.023	0	%100
62	94	Z	-0.023	-0.023	0	%100
63	95	Z	-0.023	-0.023	0	%100
64	96	Z	-0.023	-0.023	0	%100
65	97	Z	-0.023	-0.023	0	%100
66	100	Z	-0.023	-0.023	0	%100
67	101	Z	-0.023	-0.023	0	%100
68	102	Z	-0.023	-0.023	0	%100
69	103	Z	-0.023	-0.023	0	%100
70	106	Z	-0.015	-0.015	0	%100
71	107	Z	-0.015	-0.015	0	%100

Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
72	108	Z	-0.015	-0.015	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.016	-0.016	0	%100
2	2	X	-0.019	-0.019	0	%100
3	3	X	-0.018	-0.018	0	%100
4	4	X	-0.018	-0.018	0	%100
5	5	X	-0.013	-0.013	0	%100
6	6	X	-0.017	-0.017	0	%100
7	7	X	-0.017	-0.017	0	%100
8	8	X	-0.016	-0.016	0	%100
9	9	X	-0.019	-0.019	0	%100
10	10	X	-0.018	-0.018	0	%100
11	11	X	-0.018	-0.018	0	%100
12	12	X	-0.023	-0.023	0	%100
13	13	X	-0.023	-0.023	0	%100
14	14	X	-0.017	-0.017	0	%100
15	15	X	-0.017	-0.017	0	%100
16	16	X	-0.023	-0.023	0	%100
17	17	X	-0.023	-0.023	0	%100
18	18	X	-0.016	-0.016	0	%100
19	19	X	-0.019	-0.019	0	%100
20	20	X	-0.018	-0.018	0	%100
21	21	X	-0.018	-0.018	0	%100
22	22	X	-0.023	-0.023	0	%100
23	23	X	-0.023	-0.023	0	%100
24	24	X	-0.017	-0.017	0	%100
25	25	X	-0.017	-0.017	0	%100
26	26	X	-0.023	-0.023	0	%100
27	27	X	-0.023	-0.023	0	%100
28	32	X	-0.013	-0.013	0	%100
29	33	X	-0.023	-0.023	0	%100
30	34	X	-0.023	-0.023	0	%100
31	35	X	-0.023	-0.023	0	%100
32	36	X	-0.023	-0.023	0	%100
33	37	X	-0.023	-0.023	0	%100
34	38	X	-0.023	-0.023	0	%100
35	39	X	-0.023	-0.023	0	%100
36	40	X	-0.023	-0.023	0	%100
37	45	X	-0.013	-0.013	0	%100
38	46	X	-0.023	-0.023	0	%100
39	47	X	-0.023	-0.023	0	%100
40	48	X	-0.023	-0.023	0	%100
41	49	X	-0.023	-0.023	0	%100
42	50	X	-0.023	-0.023	0	%100
43	51	X	-0.023	-0.023	0	%100
44	52	X	-0.023	-0.023	0	%100
45	53	X	-0.023	-0.023	0	%100
46	58	X	-0.011	-0.011	0	%100
47	61	X	-0.009	-0.009	0	%100
48	64	X	-0.009	-0.009	0	%100
49	67	X	-0.009	-0.009	0	%100
50	68	X	-0.011	-0.011	0	%100
51	71	X	-0.009	-0.009	0	%100
52	74	X	-0.009	-0.009	0	%100
53	77	X	-0.009	-0.009	0	%100
54	78	X	-0.011	-0.011	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
55	81	X	-0.009	-0.009	0	%100
56	84	X	-0.009	-0.009	0	%100
57	87	X	-0.009	-0.009	0	%100
58	88	X	-0.023	-0.023	0	%100
59	89	X	-0.023	-0.023	0	%100
60	90	X	-0.023	-0.023	0	%100
61	91	X	-0.023	-0.023	0	%100
62	94	X	-0.023	-0.023	0	%100
63	95	X	-0.023	-0.023	0	%100
64	96	X	-0.023	-0.023	0	%100
65	97	X	-0.023	-0.023	0	%100
66	100	X	-0.023	-0.023	0	%100
67	101	X	-0.023	-0.023	0	%100
68	102	X	-0.023	-0.023	0	%100
69	103	X	-0.023	-0.023	0	%100
70	106	X	-0.015	-0.015	0	%100
71	107	X	-0.015	-0.015	0	%100
72	108	X	-0.015	-0.015	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.005	-0.005	0	%100
2	2	Z	-0.005	-0.005	0	%100
3	3	Z	-0.005	-0.005	0	%100
4	4	Z	-0.005	-0.005	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.005	-0.005	0	%100
7	7	Z	-0.005	-0.005	0	%100
8	8	Z	-0.005	-0.005	0	%100
9	9	Z	-0.005	-0.005	0	%100
10	10	Z	-0.005	-0.005	0	%100
11	11	Z	-0.005	-0.005	0	%100
12	12	Z	-0.008	-0.008	0	%100
13	13	Z	-0.008	-0.008	0	%100
14	14	Z	-0.005	-0.005	0	%100
15	15	Z	-0.005	-0.005	0	%100
16	16	Z	-0.009	-0.009	0	%100
17	17	Z	-0.01	-0.01	0	%100
18	18	Z	-0.005	-0.005	0	%100
19	19	Z	-0.005	-0.005	0	%100
20	20	Z	-0.005	-0.005	0	%100
21	21	Z	-0.005	-0.005	0	%100
22	22	Z	-0.008	-0.008	0	%100
23	23	Z	-0.008	-0.008	0	%100
24	24	Z	-0.005	-0.005	0	%100
25	25	Z	-0.005	-0.005	0	%100
26	26	Z	-0.009	-0.009	0	%100
27	27	Z	-0.01	-0.01	0	%100
28	32	Z	-0.002	-0.002	0	%100
29	33	Z	-0.008	-0.008	0	%100
30	34	Z	-0.008	-0.008	0	%100
31	35	Z	-0.009	-0.009	0	%100
32	36	Z	-0.01	-0.01	0	%100
33	37	Z	-0.008	-0.008	0	%100
34	38	Z	-0.008	-0.008	0	%100
35	39	Z	-0.009	-0.009	0	%100
36	40	Z	-0.01	-0.01	0	%100
37	45	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
38	46	Z	-0.008	-0.008	0	%100
39	47	Z	-0.008	-0.008	0	%100
40	48	Z	-0.009	-0.009	0	%100
41	49	Z	-0.01	-0.01	0	%100
42	50	Z	-0.008	-0.008	0	%100
43	51	Z	-0.008	-0.008	0	%100
44	52	Z	-0.009	-0.009	0	%100
45	53	Z	-0.01	-0.01	0	%100
46	58	Z	-0.002	-0.002	0	%100
47	61	Z	-0.002	-0.002	0	%100
48	64	Z	-0.002	-0.002	0	%100
49	67	Z	-0.002	-0.002	0	%100
50	68	Z	-0.002	-0.002	0	%100
51	71	Z	-0.002	-0.002	0	%100
52	74	Z	-0.002	-0.002	0	%100
53	77	Z	-0.002	-0.002	0	%100
54	78	Z	-0.002	-0.002	0	%100
55	81	Z	-0.002	-0.002	0	%100
56	84	Z	-0.002	-0.002	0	%100
57	87	Z	-0.002	-0.002	0	%100
58	88	Z	-0.008	-0.008	0	%100
59	89	Z	-0.009	-0.009	0	%100
60	90	Z	-0.008	-0.008	0	%100
61	91	Z	-0.009	-0.009	0	%100
62	94	Z	-0.008	-0.008	0	%100
63	95	Z	-0.009	-0.009	0	%100
64	96	Z	-0.008	-0.008	0	%100
65	97	Z	-0.009	-0.009	0	%100
66	100	Z	-0.008	-0.008	0	%100
67	101	Z	-0.009	-0.009	0	%100
68	102	Z	-0.008	-0.008	0	%100
69	103	Z	-0.009	-0.009	0	%100
70	106	Z	-0.005	-0.005	0	%100
71	107	Z	-0.005	-0.005	0	%100
72	108	Z	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.005	-0.005	0	%100
2	2	X	-0.005	-0.005	0	%100
3	3	X	-0.005	-0.005	0	%100
4	4	X	-0.005	-0.005	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.005	-0.005	0	%100
7	7	X	-0.005	-0.005	0	%100
8	8	X	-0.005	-0.005	0	%100
9	9	X	-0.005	-0.005	0	%100
10	10	X	-0.005	-0.005	0	%100
11	11	X	-0.005	-0.005	0	%100
12	12	X	-0.008	-0.008	0	%100
13	13	X	-0.008	-0.008	0	%100
14	14	X	-0.005	-0.005	0	%100
15	15	X	-0.005	-0.005	0	%100
16	16	X	-0.009	-0.009	0	%100
17	17	X	-0.01	-0.01	0	%100
18	18	X	-0.005	-0.005	0	%100
19	19	X	-0.005	-0.005	0	%100
20	20	X	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
21	21	X	-0.005	-0.005	0	%100
22	22	X	-0.008	-0.008	0	%100
23	23	X	-0.008	-0.008	0	%100
24	24	X	-0.005	-0.005	0	%100
25	25	X	-0.005	-0.005	0	%100
26	26	X	-0.009	-0.009	0	%100
27	27	X	-0.01	-0.01	0	%100
28	32	X	-0.002	-0.002	0	%100
29	33	X	-0.008	-0.008	0	%100
30	34	X	-0.008	-0.008	0	%100
31	35	X	-0.009	-0.009	0	%100
32	36	X	-0.01	-0.01	0	%100
33	37	X	-0.008	-0.008	0	%100
34	38	X	-0.008	-0.008	0	%100
35	39	X	-0.009	-0.009	0	%100
36	40	X	-0.01	-0.01	0	%100
37	45	X	-0.002	-0.002	0	%100
38	46	X	-0.008	-0.008	0	%100
39	47	X	-0.008	-0.008	0	%100
40	48	X	-0.009	-0.009	0	%100
41	49	X	-0.01	-0.01	0	%100
42	50	X	-0.008	-0.008	0	%100
43	51	X	-0.008	-0.008	0	%100
44	52	X	-0.009	-0.009	0	%100
45	53	X	-0.01	-0.01	0	%100
46	58	X	-0.002	-0.002	0	%100
47	61	X	-0.002	-0.002	0	%100
48	64	X	-0.002	-0.002	0	%100
49	67	X	-0.002	-0.002	0	%100
50	68	X	-0.002	-0.002	0	%100
51	71	X	-0.002	-0.002	0	%100
52	74	X	-0.002	-0.002	0	%100
53	77	X	-0.002	-0.002	0	%100
54	78	X	-0.002	-0.002	0	%100
55	81	X	-0.002	-0.002	0	%100
56	84	X	-0.002	-0.002	0	%100
57	87	X	-0.002	-0.002	0	%100
58	88	X	-0.008	-0.008	0	%100
59	89	X	-0.009	-0.009	0	%100
60	90	X	-0.008	-0.008	0	%100
61	91	X	-0.009	-0.009	0	%100
62	94	X	-0.008	-0.008	0	%100
63	95	X	-0.009	-0.009	0	%100
64	96	X	-0.008	-0.008	0	%100
65	97	X	-0.009	-0.009	0	%100
66	100	X	-0.008	-0.008	0	%100
67	101	X	-0.009	-0.009	0	%100
68	102	X	-0.008	-0.008	0	%100
69	103	X	-0.009	-0.009	0	%100
70	106	X	-0.005	-0.005	0	%100
71	107	X	-0.005	-0.005	0	%100
72	108	X	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.0004	-0.0004	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.001	-0.001	0	%100
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.001	-0.001	0	%100
10	10	Z	-0.001	-0.001	0	%100
11	11	Z	-0.001	-0.001	0	%100
12	12	Z	-0.001	-0.001	0	%100
13	13	Z	-0.001	-0.001	0	%100
14	14	Z	-0.001	-0.001	0	%100
15	15	Z	-0.001	-0.001	0	%100
16	16	Z	-0.001	-0.001	0	%100
17	17	Z	-0.001	-0.001	0	%100
18	18	Z	-0.001	-0.001	0	%100
19	19	Z	-0.001	-0.001	0	%100
20	20	Z	-0.001	-0.001	0	%100
21	21	Z	-0.001	-0.001	0	%100
22	22	Z	-0.001	-0.001	0	%100
23	23	Z	-0.001	-0.001	0	%100
24	24	Z	-0.001	-0.001	0	%100
25	25	Z	-0.001	-0.001	0	%100
26	26	Z	-0.001	-0.001	0	%100
27	27	Z	-0.001	-0.001	0	%100
28	32	Z	-0.0004	-0.0004	0	%100
29	33	Z	-0.001	-0.001	0	%100
30	34	Z	-0.001	-0.001	0	%100
31	35	Z	-0.001	-0.001	0	%100
32	36	Z	-0.001	-0.001	0	%100
33	37	Z	-0.001	-0.001	0	%100
34	38	Z	-0.001	-0.001	0	%100
35	39	Z	-0.001	-0.001	0	%100
36	40	Z	-0.001	-0.001	0	%100
37	45	Z	-0.0004	-0.0004	0	%100
38	46	Z	-0.001	-0.001	0	%100
39	47	Z	-0.001	-0.001	0	%100
40	48	Z	-0.001	-0.001	0	%100
41	49	Z	-0.001	-0.001	0	%100
42	50	Z	-0.001	-0.001	0	%100
43	51	Z	-0.001	-0.001	0	%100
44	52	Z	-0.001	-0.001	0	%100
45	53	Z	-0.001	-0.001	0	%100
46	58	Z	-0.0003	-0.0003	0	%100
47	61	Z	-0.0003	-0.0003	0	%100
48	64	Z	-0.0003	-0.0003	0	%100
49	67	Z	-0.0003	-0.0003	0	%100
50	68	Z	-0.0003	-0.0003	0	%100
51	71	Z	-0.0003	-0.0003	0	%100
52	74	Z	-0.0003	-0.0003	0	%100
53	77	Z	-0.0003	-0.0003	0	%100
54	78	Z	-0.0003	-0.0003	0	%100
55	81	Z	-0.0003	-0.0003	0	%100
56	84	Z	-0.0003	-0.0003	0	%100
57	87	Z	-0.0003	-0.0003	0	%100
58	88	Z	-0.001	-0.001	0	%100
59	89	Z	-0.001	-0.001	0	%100
60	90	Z	-0.001	-0.001	0	%100
61	91	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
62	94	Z	-0.001	-0.001	0	%100
63	95	Z	-0.001	-0.001	0	%100
64	96	Z	-0.001	-0.001	0	%100
65	97	Z	-0.001	-0.001	0	%100
66	100	Z	-0.001	-0.001	0	%100
67	101	Z	-0.001	-0.001	0	%100
68	102	Z	-0.001	-0.001	0	%100
69	103	Z	-0.001	-0.001	0	%100
70	106	Z	-0.0009	-0.0009	0	%100
71	107	Z	-0.0009	-0.0009	0	%100
72	108	Z	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.0004	-0.0004	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	9	X	-0.001	-0.001	0	%100
10	10	X	-0.001	-0.001	0	%100
11	11	X	-0.001	-0.001	0	%100
12	12	X	-0.001	-0.001	0	%100
13	13	X	-0.001	-0.001	0	%100
14	14	X	-0.001	-0.001	0	%100
15	15	X	-0.001	-0.001	0	%100
16	16	X	-0.001	-0.001	0	%100
17	17	X	-0.001	-0.001	0	%100
18	18	X	-0.001	-0.001	0	%100
19	19	X	-0.001	-0.001	0	%100
20	20	X	-0.001	-0.001	0	%100
21	21	X	-0.001	-0.001	0	%100
22	22	X	-0.001	-0.001	0	%100
23	23	X	-0.001	-0.001	0	%100
24	24	X	-0.001	-0.001	0	%100
25	25	X	-0.001	-0.001	0	%100
26	26	X	-0.001	-0.001	0	%100
27	27	X	-0.001	-0.001	0	%100
28	32	X	-0.0004	-0.0004	0	%100
29	33	X	-0.001	-0.001	0	%100
30	34	X	-0.001	-0.001	0	%100
31	35	X	-0.001	-0.001	0	%100
32	36	X	-0.001	-0.001	0	%100
33	37	X	-0.001	-0.001	0	%100
34	38	X	-0.001	-0.001	0	%100
35	39	X	-0.001	-0.001	0	%100
36	40	X	-0.001	-0.001	0	%100
37	45	X	-0.0004	-0.0004	0	%100
38	46	X	-0.001	-0.001	0	%100
39	47	X	-0.001	-0.001	0	%100
40	48	X	-0.001	-0.001	0	%100
41	49	X	-0.001	-0.001	0	%100
42	50	X	-0.001	-0.001	0	%100
43	51	X	-0.001	-0.001	0	%100
44	52	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	53	X	-0.001	-0.001	0	%100
46	58	X	-0.0003	-0.0003	0	%100
47	61	X	-0.0003	-0.0003	0	%100
48	64	X	-0.0003	-0.0003	0	%100
49	67	X	-0.0003	-0.0003	0	%100
50	68	X	-0.0003	-0.0003	0	%100
51	71	X	-0.0003	-0.0003	0	%100
52	74	X	-0.0003	-0.0003	0	%100
53	77	X	-0.0003	-0.0003	0	%100
54	78	X	-0.0003	-0.0003	0	%100
55	81	X	-0.0003	-0.0003	0	%100
56	84	X	-0.0003	-0.0003	0	%100
57	87	X	-0.0003	-0.0003	0	%100
58	88	X	-0.001	-0.001	0	%100
59	89	X	-0.001	-0.001	0	%100
60	90	X	-0.001	-0.001	0	%100
61	91	X	-0.001	-0.001	0	%100
62	94	X	-0.001	-0.001	0	%100
63	95	X	-0.001	-0.001	0	%100
64	96	X	-0.001	-0.001	0	%100
65	97	X	-0.001	-0.001	0	%100
66	100	X	-0.001	-0.001	0	%100
67	101	X	-0.001	-0.001	0	%100
68	102	X	-0.001	-0.001	0	%100
69	103	X	-0.001	-0.001	0	%100
70	106	X	-0.0009	-0.0009	0	%100
71	107	X	-0.0009	-0.0009	0	%100
72	108	X	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.009	-0.009	0	%100
2	2	Y	-0.01	-0.01	0	%100
3	3	Y	-0.009	-0.009	0	%100
4	4	Y	-0.009	-0.009	0	%100
5	5	Y	-0.006	-0.006	0	%100
6	6	Y	-0.009	-0.009	0	%100
7	7	Y	-0.009	-0.009	0	%100
8	8	Y	-0.009	-0.009	0	%100
9	9	Y	-0.01	-0.01	0	%100
10	10	Y	-0.009	-0.009	0	%100
11	11	Y	-0.009	-0.009	0	%100
12	12	Y	-0.01	-0.01	0	%100
13	13	Y	-0.01	-0.01	0	%100
14	14	Y	-0.009	-0.009	0	%100
15	15	Y	-0.009	-0.009	0	%100
16	16	Y	-0.01	-0.01	0	%100
17	17	Y	-0.01	-0.01	0	%100
18	18	Y	-0.009	-0.009	0	%100
19	19	Y	-0.01	-0.01	0	%100
20	20	Y	-0.009	-0.009	0	%100
21	21	Y	-0.009	-0.009	0	%100
22	22	Y	-0.01	-0.01	0	%100
23	23	Y	-0.01	-0.01	0	%100
24	24	Y	-0.009	-0.009	0	%100
25	25	Y	-0.009	-0.009	0	%100
26	26	Y	-0.01	-0.01	0	%100
27	27	Y	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
28	32	Y	-0.006	-0.006	0	%100
29	33	Y	-0.01	-0.01	0	%100
30	34	Y	-0.01	-0.01	0	%100
31	35	Y	-0.01	-0.01	0	%100
32	36	Y	-0.01	-0.01	0	%100
33	37	Y	-0.01	-0.01	0	%100
34	38	Y	-0.01	-0.01	0	%100
35	39	Y	-0.01	-0.01	0	%100
36	40	Y	-0.01	-0.01	0	%100
37	45	Y	-0.006	-0.006	0	%100
38	46	Y	-0.01	-0.01	0	%100
39	47	Y	-0.01	-0.01	0	%100
40	48	Y	-0.01	-0.01	0	%100
41	49	Y	-0.01	-0.01	0	%100
42	50	Y	-0.01	-0.01	0	%100
43	51	Y	-0.01	-0.01	0	%100
44	52	Y	-0.01	-0.01	0	%100
45	53	Y	-0.01	-0.01	0	%100
46	58	Y	-0.005	-0.005	0	%100
47	61	Y	-0.005	-0.005	0	%100
48	64	Y	-0.005	-0.005	0	%100
49	67	Y	-0.005	-0.005	0	%100
50	68	Y	-0.005	-0.005	0	%100
51	71	Y	-0.005	-0.005	0	%100
52	74	Y	-0.005	-0.005	0	%100
53	77	Y	-0.005	-0.005	0	%100
54	78	Y	-0.005	-0.005	0	%100
55	81	Y	-0.005	-0.005	0	%100
56	84	Y	-0.005	-0.005	0	%100
57	87	Y	-0.005	-0.005	0	%100
58	88	Y	-0.01	-0.01	0	%100
59	89	Y	-0.01	-0.01	0	%100
60	90	Y	-0.01	-0.01	0	%100
61	91	Y	-0.01	-0.01	0	%100
62	94	Y	-0.01	-0.01	0	%100
63	95	Y	-0.01	-0.01	0	%100
64	96	Y	-0.01	-0.01	0	%100
65	97	Y	-0.01	-0.01	0	%100
66	100	Y	-0.01	-0.01	0	%100
67	101	Y	-0.01	-0.01	0	%100
68	102	Y	-0.01	-0.01	0	%100
69	103	Y	-0.01	-0.01	0	%100
70	106	Y	-0.006	-0.006	0	%100
71	107	Y	-0.006	-0.006	0	%100
72	108	Y	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.003	-0.003	0	%100
2	2	Z	-0.003	-0.003	0	%100
3	3	Z	-0.003	-0.003	0	%100
4	4	Z	-0.003	-0.003	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.003	-0.003	0	%100
7	7	Z	-0.003	-0.003	0	%100
8	8	Z	-0.003	-0.003	0	%100
9	9	Z	-0.003	-0.003	0	%100
10	10	Z	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
11	11	Z	-0.003	-0.003	0	%100
12	12	Z	-0.002	-0.002	0	%100
13	13	Z	-0.002	-0.002	0	%100
14	14	Z	-0.003	-0.003	0	%100
15	15	Z	-0.003	-0.003	0	%100
16	16	Z	-0.002	-0.002	0	%100
17	17	Z	-0.002	-0.002	0	%100
18	18	Z	-0.003	-0.003	0	%100
19	19	Z	-0.003	-0.003	0	%100
20	20	Z	-0.003	-0.003	0	%100
21	21	Z	-0.003	-0.003	0	%100
22	22	Z	-0.002	-0.002	0	%100
23	23	Z	-0.002	-0.002	0	%100
24	24	Z	-0.003	-0.003	0	%100
25	25	Z	-0.003	-0.003	0	%100
26	26	Z	-0.002	-0.002	0	%100
27	27	Z	-0.002	-0.002	0	%100
28	32	Z	-0.002	-0.002	0	%100
29	33	Z	-0.002	-0.002	0	%100
30	34	Z	-0.002	-0.002	0	%100
31	35	Z	-0.002	-0.002	0	%100
32	36	Z	-0.002	-0.002	0	%100
33	37	Z	-0.002	-0.002	0	%100
34	38	Z	-0.002	-0.002	0	%100
35	39	Z	-0.002	-0.002	0	%100
36	40	Z	-0.002	-0.002	0	%100
37	45	Z	-0.002	-0.002	0	%100
38	46	Z	-0.002	-0.002	0	%100
39	47	Z	-0.002	-0.002	0	%100
40	48	Z	-0.002	-0.002	0	%100
41	49	Z	-0.002	-0.002	0	%100
42	50	Z	-0.002	-0.002	0	%100
43	51	Z	-0.002	-0.002	0	%100
44	52	Z	-0.002	-0.002	0	%100
45	53	Z	-0.002	-0.002	0	%100
46	58	Z	-0.002	-0.002	0	%100
47	61	Z	-0.0009	-0.0009	0	%100
48	64	Z	-0.0009	-0.0009	0	%100
49	67	Z	-0.0009	-0.0009	0	%100
50	68	Z	-0.002	-0.002	0	%100
51	71	Z	-0.0009	-0.0009	0	%100
52	74	Z	-0.0009	-0.0009	0	%100
53	77	Z	-0.0009	-0.0009	0	%100
54	78	Z	-0.002	-0.002	0	%100
55	81	Z	-0.0009	-0.0009	0	%100
56	84	Z	-0.0009	-0.0009	0	%100
57	87	Z	-0.0009	-0.0009	0	%100
58	88	Z	-0.002	-0.002	0	%100
59	89	Z	-0.002	-0.002	0	%100
60	90	Z	-0.002	-0.002	0	%100
61	91	Z	-0.002	-0.002	0	%100
62	94	Z	-0.002	-0.002	0	%100
63	95	Z	-0.002	-0.002	0	%100
64	96	Z	-0.002	-0.002	0	%100
65	97	Z	-0.002	-0.002	0	%100
66	100	Z	-0.002	-0.002	0	%100
67	101	Z	-0.002	-0.002	0	%100
68	102	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
69	103	Z	-0.002	-0.002	0	%100
70	106	Z	-0.0008	-0.0008	0	%100
71	107	Z	-0.0008	-0.0008	0	%100
72	108	Z	-0.0008	-0.0008	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.003	-0.003	0	%100
2	2	X	-0.003	-0.003	0	%100
3	3	X	-0.003	-0.003	0	%100
4	4	X	-0.003	-0.003	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.003	-0.003	0	%100
7	7	X	-0.003	-0.003	0	%100
8	8	X	-0.003	-0.003	0	%100
9	9	X	-0.003	-0.003	0	%100
10	10	X	-0.003	-0.003	0	%100
11	11	X	-0.003	-0.003	0	%100
12	12	X	-0.002	-0.002	0	%100
13	13	X	-0.002	-0.002	0	%100
14	14	X	-0.003	-0.003	0	%100
15	15	X	-0.003	-0.003	0	%100
16	16	X	-0.002	-0.002	0	%100
17	17	X	-0.002	-0.002	0	%100
18	18	X	-0.003	-0.003	0	%100
19	19	X	-0.003	-0.003	0	%100
20	20	X	-0.003	-0.003	0	%100
21	21	X	-0.003	-0.003	0	%100
22	22	X	-0.002	-0.002	0	%100
23	23	X	-0.002	-0.002	0	%100
24	24	X	-0.003	-0.003	0	%100
25	25	X	-0.003	-0.003	0	%100
26	26	X	-0.002	-0.002	0	%100
27	27	X	-0.002	-0.002	0	%100
28	32	X	-0.002	-0.002	0	%100
29	33	X	-0.002	-0.002	0	%100
30	34	X	-0.002	-0.002	0	%100
31	35	X	-0.002	-0.002	0	%100
32	36	X	-0.002	-0.002	0	%100
33	37	X	-0.002	-0.002	0	%100
34	38	X	-0.002	-0.002	0	%100
35	39	X	-0.002	-0.002	0	%100
36	40	X	-0.002	-0.002	0	%100
37	45	X	-0.002	-0.002	0	%100
38	46	X	-0.002	-0.002	0	%100
39	47	X	-0.002	-0.002	0	%100
40	48	X	-0.002	-0.002	0	%100
41	49	X	-0.002	-0.002	0	%100
42	50	X	-0.002	-0.002	0	%100
43	51	X	-0.002	-0.002	0	%100
44	52	X	-0.002	-0.002	0	%100
45	53	X	-0.002	-0.002	0	%100
46	58	X	-0.002	-0.002	0	%100
47	61	X	-0.0009	-0.0009	0	%100
48	64	X	-0.0009	-0.0009	0	%100
49	67	X	-0.0009	-0.0009	0	%100
50	68	X	-0.002	-0.002	0	%100
51	71	X	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
52	74	X	-0.0009	-0.0009	0	%100
53	77	X	-0.0009	-0.0009	0	%100
54	78	X	-0.002	-0.002	0	%100
55	81	X	-0.0009	-0.0009	0	%100
56	84	X	-0.0009	-0.0009	0	%100
57	87	X	-0.0009	-0.0009	0	%100
58	88	X	-0.002	-0.002	0	%100
59	89	X	-0.002	-0.002	0	%100
60	90	X	-0.002	-0.002	0	%100
61	91	X	-0.002	-0.002	0	%100
62	94	X	-0.002	-0.002	0	%100
63	95	X	-0.002	-0.002	0	%100
64	96	X	-0.002	-0.002	0	%100
65	97	X	-0.002	-0.002	0	%100
66	100	X	-0.002	-0.002	0	%100
67	101	X	-0.002	-0.002	0	%100
68	102	X	-0.002	-0.002	0	%100
69	103	X	-0.002	-0.002	0	%100
70	106	X	-0.0008	-0.0008	0	%100
71	107	X	-0.0008	-0.0008	0	%100
72	108	X	-0.0008	-0.0008	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	5	Y	0	-0.001	0	0.8
2	5	Y	-0.001	-0.001	0.8	1.6
3	5	Y	-0.001	0	1.6	2.4
4	9	Y	-0.002	-0.014	0	0.694
5	9	Y	-0.014	-0.015	0.694	1.389
6	9	Y	-0.015	-0.003	1.389	2.083
7	10	Y	-0.001	-0.006	0	0.593
8	10	Y	-0.006	-0.009	0.593	1.185
9	10	Y	-0.009	-0.009	1.185	1.778
10	10	Y	-0.009	-0.006	1.778	2.371
11	10	Y	-0.006	-0.000536	2.371	2.964
12	11	Y	-0.0005405	-0.007	0.188	0.78
13	11	Y	-0.007	-0.009	0.78	1.373
14	11	Y	-0.009	-0.008	1.373	1.966
15	11	Y	-0.008	-0.007	1.966	2.558
16	11	Y	-0.007	-0.0009811	2.558	3.151
17	13	Y	-0.073	-0.023	0	0.104
18	13	Y	-0.023	0.002	0.104	0.208
19	13	Y	0.002	0.003	0.208	0.313
20	13	Y	0.003	0.003	0.313	0.417
21	14	Y	-0.0007206	-0.004	0	0.4
22	14	Y	-0.004	-0.009	0.4	0.8
23	14	Y	-0.009	-0.01	0.8	1.2
24	14	Y	-0.01	-0.006	1.2	1.6
25	14	Y	-0.006	-0.003	1.6	2
26	15	Y	-0.003	-0.006	0.188	0.588
27	15	Y	-0.006	-0.01	0.588	0.988
28	15	Y	-0.01	-0.009	0.988	1.388
29	15	Y	-0.009	-0.004	1.388	1.788
30	15	Y	-0.004	-0.000745	1.788	2.188
31	17	Y	-0.009	-0.009	0	0.216
32	45	Y	0	-0.001	5.6	6.4
33	45	Y	-0.001	-0.001	6.4	7.2
34	45	Y	-0.001	0	7.2	8

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
35	51	Y	-0.072	-0.023	0	0.104
36	51	Y	-0.023	0.002	0.104	0.208
37	51	Y	0.002	0.003	0.208	0.313
38	51	Y	0.003	0.003	0.313	0.417
39	53	Y	-0.009	-0.009	0	0.216
40	5	Y	0	-0.001	5.6	6.4
41	5	Y	-0.001	-0.001	6.4	7.2
42	5	Y	-0.001	0	7.2	8
43	19	Y	-0.002	-0.014	0	0.694
44	19	Y	-0.014	-0.015	0.694	1.389
45	19	Y	-0.015	-0.003	1.389	2.083
46	20	Y	-0.001	-0.006	0	0.593
47	20	Y	-0.006	-0.009	0.593	1.185
48	20	Y	-0.009	-0.009	1.185	1.778
49	20	Y	-0.009	-0.006	1.778	2.371
50	20	Y	-0.006	-0.0005361	2.371	2.964
51	21	Y	-0.0005405	-0.007	0.188	0.78
52	21	Y	-0.007	-0.009	0.78	1.373
53	21	Y	-0.009	-0.008	1.373	1.966
54	21	Y	-0.008	-0.007	1.966	2.558
55	21	Y	-0.007	-0.0009812	2.558	3.151
56	23	Y	-0.072	-0.023	0	0.104
57	23	Y	-0.023	0.002	0.104	0.208
58	23	Y	0.002	0.003	0.208	0.313
59	23	Y	0.003	0.003	0.313	0.417
60	24	Y	-0.0007239	-0.004	0	0.4
61	24	Y	-0.004	-0.009	0.4	0.8
62	24	Y	-0.009	-0.01	0.8	1.2
63	24	Y	-0.01	-0.006	1.2	1.6
64	24	Y	-0.006	-0.003	1.6	2
65	25	Y	-0.003	-0.006	0.188	0.587
66	25	Y	-0.006	-0.01	0.587	0.987
67	25	Y	-0.01	-0.009	0.987	1.387
68	25	Y	-0.009	-0.004	1.387	1.787
69	25	Y	-0.004	-0.0007447	1.787	2.187
70	27	Y	-0.009	-0.009	0	0.216
71	32	Y	0	-0.001	0	0.8
72	32	Y	-0.001	-0.001	0.8	1.6
73	32	Y	-0.001	0	1.6	2.4
74	34	Y	-0.073	-0.023	0	0.104
75	34	Y	-0.023	0.002	0.104	0.208
76	34	Y	0.002	0.003	0.208	0.313
77	34	Y	0.003	0.003	0.313	0.417
78	36	Y	-0.009	-0.009	0	0.216
79	2	Y	-0.002	-0.014	0	0.694
80	2	Y	-0.014	-0.015	0.694	1.389
81	2	Y	-0.015	-0.003	1.389	2.083
82	3	Y	-0.001	-0.006	0	0.593
83	3	Y	-0.006	-0.009	0.593	1.185
84	3	Y	-0.009	-0.009	1.185	1.778
85	3	Y	-0.009	-0.006	1.778	2.371
86	3	Y	-0.006	-0.0005361	2.371	2.964
87	4	Y	-0.0005405	-0.007	0.188	0.78
88	4	Y	-0.007	-0.009	0.78	1.373
89	4	Y	-0.009	-0.008	1.373	1.966
90	4	Y	-0.008	-0.007	1.966	2.558
91	4	Y	-0.007	-0.0009812	2.558	3.151
92	6	Y	-0.0007255	-0.004	0	0.4

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
93	6	Y	-0.004	-0.009	0.4	0.8
94	6	Y	-0.009	-0.01	0.8	1.2
95	6	Y	-0.01	-0.006	1.2	1.6
96	6	Y	-0.006	-0.003	1.6	2
97	7	Y	-0.003	-0.006	0.188	0.588
98	7	Y	-0.006	-0.01	0.588	0.988
99	7	Y	-0.01	-0.009	0.988	1.388
100	7	Y	-0.009	-0.004	1.388	1.788
101	7	Y	-0.004	-0.0007447	1.788	2.188
102	32	Y	0	-0.001	5.6	6.4
103	32	Y	-0.001	-0.001	6.4	7.2
104	32	Y	-0.001	0	7.2	8
105	38	Y	-0.072	-0.023	0	0.104
106	38	Y	-0.023	0.002	0.104	0.208
107	38	Y	0.002	0.003	0.208	0.313
108	38	Y	0.003	0.003	0.313	0.417
109	40	Y	-0.009	-0.009	0	0.216
110	45	Y	0	-0.001	0	0.8
111	45	Y	-0.001	-0.001	0.8	1.6
112	45	Y	-0.001	0	1.6	2.4
113	47	Y	-0.073	-0.023	0	0.104
114	47	Y	-0.023	0.002	0.104	0.208
115	47	Y	0.002	0.003	0.208	0.313
116	47	Y	0.003	0.003	0.313	0.417
117	49	Y	-0.009	-0.009	0	0.216

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	5	Y	0	-0.0006739	0	0.8
2	5	Y	-0.0006739	-0.0006739	0.8	1.6
3	5	Y	-0.0006739	0	1.6	2.4
4	9	Y	-0.0009455	-0.007	0	0.694
5	9	Y	-0.007	-0.008	0.694	1.389
6	9	Y	-0.008	-0.001	1.389	2.083
7	10	Y	-0.0005325	-0.003	0	0.593
8	10	Y	-0.003	-0.005	0.593	1.185
9	10	Y	-0.005	-0.005	1.185	1.778
10	10	Y	-0.005	-0.003	1.778	2.371
11	10	Y	-0.003	-0.0002836	2.371	2.964
12	11	Y	-0.000286	-0.004	0.188	0.78
13	11	Y	-0.004	-0.005	0.78	1.373
14	11	Y	-0.005	-0.004	1.373	1.966
15	11	Y	-0.004	-0.003	1.966	2.558
16	11	Y	-0.003	-0.0005191	2.558	3.151
17	13	Y	-0.039	-0.012	0	0.104
18	13	Y	-0.012	0.001	0.104	0.208
19	13	Y	0.001	0.002	0.208	0.313
20	13	Y	0.002	0.002	0.313	0.417
21	14	Y	-0.0003813	-0.002	0	0.4
22	14	Y	-0.002	-0.005	0.4	0.8
23	14	Y	-0.005	-0.005	0.8	1.2
24	14	Y	-0.005	-0.003	1.2	1.6
25	14	Y	-0.003	-0.002	1.6	2
26	15	Y	-0.002	-0.003	0.188	0.588
27	15	Y	-0.003	-0.005	0.588	0.988
28	15	Y	-0.005	-0.005	0.988	1.388
29	15	Y	-0.005	-0.002	1.388	1.788
30	15	Y	-0.002	-0.0003942	1.788	2.188

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
31	17	Y	-0.005	-0.005	0	0.216
32	45	Y	0	-0.0006672	5.6	6.4
33	45	Y	-0.0006672	-0.0006672	6.4	7.2
34	45	Y	-0.0006672	0	7.2	8
35	51	Y	-0.038	-0.012	0	0.104
36	51	Y	-0.012	0.001	0.104	0.208
37	51	Y	0.001	0.002	0.208	0.313
38	51	Y	0.002	0.002	0.313	0.417
39	53	Y	-0.005	-0.005	0	0.216
40	5	Y	0	-0.0006305	5.6	6.4
41	5	Y	-0.0006305	-0.0006305	6.4	7.2
42	5	Y	-0.0006305	0	7.2	8
43	19	Y	-0.0008945	-0.007	0	0.694
44	19	Y	-0.007	-0.008	0.694	1.389
45	19	Y	-0.008	-0.001	1.389	2.083
46	20	Y	-0.0005033	-0.003	0	0.593
47	20	Y	-0.003	-0.004	0.593	1.185
48	20	Y	-0.004	-0.005	1.185	1.778
49	20	Y	-0.005	-0.003	1.778	2.371
50	20	Y	-0.003	-0.000268	2.371	2.964
51	21	Y	-0.0002703	-0.004	0.188	0.78
52	21	Y	-0.004	-0.005	0.78	1.373
53	21	Y	-0.005	-0.004	1.373	1.966
54	21	Y	-0.004	-0.003	1.966	2.558
55	21	Y	-0.003	-0.0004906	2.558	3.151
56	23	Y	-0.036	-0.012	0	0.104
57	23	Y	-0.012	0.001	0.104	0.208
58	23	Y	0.001	0.001	0.208	0.313
59	23	Y	0.001	0.002	0.313	0.417
60	24	Y	-0.0003619	-0.002	0	0.4
61	24	Y	-0.002	-0.004	0.4	0.8
62	24	Y	-0.004	-0.005	0.8	1.2
63	24	Y	-0.005	-0.003	1.2	1.6
64	24	Y	-0.003	-0.001	1.6	2
65	25	Y	-0.001	-0.003	0.188	0.587
66	25	Y	-0.003	-0.005	0.587	0.987
67	25	Y	-0.005	-0.004	0.987	1.387
68	25	Y	-0.004	-0.002	1.387	1.787
69	25	Y	-0.002	-0.0003724	1.787	2.187
70	27	Y	-0.004	-0.004	0	0.216
71	32	Y	0	-0.0006368	0	0.8
72	32	Y	-0.0006368	-0.0006368	0.8	1.6
73	32	Y	-0.0006368	0	1.6	2.4
74	34	Y	-0.037	-0.012	0	0.104
75	34	Y	-0.012	0.001	0.104	0.208
76	34	Y	0.001	0.002	0.208	0.313
77	34	Y	0.002	0.002	0.313	0.417
78	36	Y	-0.004	-0.004	0	0.216
79	2	Y	-0.0008945	-0.007	0	0.694
80	2	Y	-0.007	-0.008	0.694	1.389
81	2	Y	-0.008	-0.001	1.389	2.083
82	3	Y	-0.0005033	-0.003	0	0.593
83	3	Y	-0.003	-0.004	0.593	1.185
84	3	Y	-0.004	-0.005	1.185	1.778
85	3	Y	-0.005	-0.003	1.778	2.371
86	3	Y	-0.003	-0.000268	2.371	2.964
87	4	Y	-0.0002703	-0.004	0.188	0.78
88	4	Y	-0.004	-0.005	0.78	1.373

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
89	4	Y	-0.005	-0.004	1.373	1.966
90	4	Y	-0.004	-0.003	1.966	2.558
91	4	Y	-0.003	-0.0004906	2.558	3.151
92	6	Y	-0.0003627	-0.002	0	0.4
93	6	Y	-0.002	-0.004	0.4	0.8
94	6	Y	-0.004	-0.005	0.8	1.2
95	6	Y	-0.005	-0.003	1.2	1.6
96	6	Y	-0.003	-0.001	1.6	2
97	7	Y	-0.001	-0.003	0.188	0.588
98	7	Y	-0.003	-0.005	0.588	0.988
99	7	Y	-0.005	-0.004	0.988	1.388
100	7	Y	-0.004	-0.002	1.388	1.788
101	7	Y	-0.002	-0.0003724	1.788	2.188
102	32	Y	0	-0.0006305	5.6	6.4
103	32	Y	-0.0006305	-0.0006305	6.4	7.2
104	32	Y	-0.0006305	0	7.2	8
105	38	Y	-0.036	-0.012	0	0.104
106	38	Y	-0.012	0.001	0.104	0.208
107	38	Y	0.001	0.001	0.208	0.313
108	38	Y	0.001	0.002	0.313	0.417
109	40	Y	-0.004	-0.004	0	0.216
110	45	Y	0	-0.0006368	0	0.8
111	45	Y	-0.0006368	-0.0006368	0.8	1.6
112	45	Y	-0.0006368	0	1.6	2.4
113	47	Y	-0.037	-0.012	0	0.104
114	47	Y	-0.012	0.001	0.104	0.208
115	47	Y	0.001	0.002	0.208	0.313
116	47	Y	0.002	0.002	0.313	0.417
117	49	Y	-0.004	-0.004	0	0.216

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	21	22	15	14	Y	Two Way	-0.01
2	31	30	37	38	Y	Two Way	-0.01
3	4	9	10	5	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	21	22	15	14	Y	Two Way	-0.005
2	31	30	37	38	Y	Two Way	-0.005
3	4	9	10	5	Y	Two Way	-0.005

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	109	L	Y	-0.5
2	129	L	Y	-0.5
3	149	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	103	L	Y	-0.5
2	123	L	Y	-0.5
3	143	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	97	L	Y	-0.5
2	117	L	Y	-0.5
3	137	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	72	
3	90 Wind - No Ice	WLX			20	72	
4	0 Wind - Ice	WLZ			20	72	
5	90 Wind - Ice	WLX			20	72	
6	0 Wind - Service	WLZ			20	72	
7	90 Wind - Service	WLX			20	72	
8	Ice	OL1			20	72	3
9	0 Seismic	ELZ			20	72	
10	90 Seismic	ELX			20	72	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				117	
31	BLC 8 Transient Area Loads	None				117	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	93	max	1.209	5	1.769	18	1.101	2	0.798	11	1.256	3	0.444	13
2		min	-1.281	11	0.158	12	-1.052	8	-2.948	41	-1.25	9	-4.605	67
3	92	max	0.796	5	1.738	14	1.558	2	5.185	2	1.04	11	1.952	65
4		min	-0.8	11	-0.036	8	-1.644	8	-1.213	8	-1.04	5	-1.015	47
5	94	max	1.145	4	1.707	22	1.299	2	-0.012	5	1.291	7	4.12	45
6		min	-1.069	10	0.137	4	-1.261	8	-3.748	71	-1.287	13	-0.927	3
7	Totals:	max	3.121	5	4.75	14	3.957	2						
8		min	-3.121	11	2.461	8	-3.957	8						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X4	0.341	0	13	0.184	0	y	64	138.094	139.518	16.181	16.181	1.253	H1-1b
2	2	HSS4.5X4.5X3	0.172	2.083	2	0.202	1.996	y	64	119.657	121.302	16.25	16.25	1.733	H1-1b
3	3	L4X4X6	0.23	2.964	49	0.061	2.964	z	64	83.036	92.664	4.398	9.886	1.5	H2-1
4	4	L4X4X6	0.257	0	64	0.043	0	z	48	83.036	92.664	4.398	9.886	1.5	H2-1
5	5	HSS3.500X0.216	0.082	0.25	12	0.088	0.25		6	51.941	78.624	6.899	6.899	2.107	H1-1b
6	6	L4X4X6	0.284	2	49	0.125	2	y	65	88.147	92.664	4.398	9.886	1.5	H2-1
7	7	L4X4X6	0.407	0	63	0.127	0	z	64	88.147	92.664	4.398	9.886	1.5	H2-1
8	8	HSS4X4X4	0.317	0	7	0.186	0	y	68	138.094	139.518	16.181	16.181	1.262	H1-1b
9	9	HSS4.5X4.5X3	0.146	2.083	6	0.203	1.996	y	68	119.657	121.302	16.25	16.25	1.739	H1-1b
10	10	L4X4X6	0.23	2.964	40	0.061	2.964	z	68	83.036	92.664	4.398	9.886	1.5	H2-1
11	11	L4X4X6	0.257	0	68	0.044	0	z	39	83.036	92.664	4.398	9.886	1.5	H2-1
12	12	PL3/8"x6	0.114	0.067	9	0.365	0.067	y	72	63.715	72.9	0.57	9.113	1.571	H1-1b
13	13	PL3/8"x6	0.15	0.273	6	0.323	0.273	y	42	65.156	72.9	0.57	9.113	3	H1-1b
14	14	L4X4X6	0.282	2	41	0.125	2	y	69	88.147	92.664	4.398	9.886	1.5	H2-1
15	15	L4X4X6	0.409	0	68	0.127	0	z	68	88.147	92.664	4.398	9.886	1.5	H2-1
16	16	PL3/8"x6	0.156	0.167	6	0.221	0	y	41	70.011	72.9	0.57	9.113	1.477	H1-1b
17	17	PL3/8"x6	0.104	0.13	9	0.14	0	y	61	70.739	72.9	0.57	9.113	1.373	H1-1b
18	18	HSS4X4X4	0.328	0	9	0.184	0	y	73	138.094	139.518	16.181	16.181	1.257	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
19	19	HSS4.5X4.5X3	0.148	2.083	9	0.202	1.996	y	73	119.657	121.302	16.25	16.25	1.74	H1-1b
20	20	L4X4X6	0.23	2.964	44	0.061	2.964	z	73	83.036	92.664	4.398	9.886	1.5	H2-1
21	21	L4X4X6	0.257	0	72	0.044	0	z	44	83.036	92.664	4.398	9.886	1.5	H2-1
22	22	PL3/8"x6	0.108	0.067	8	0.321	0.067	y	39	63.715	72.9	0.57	9.113	1.843	H1-1b
23	23	PL3/8"x6	0.169	0.273	12	0.424	0.273	y	70	65.156	72.9	0.57	9.113	2.932	H1-1b
24	24	L4X4X6	0.285	2	44	0.126	2	y	73	88.147	92.664	4.398	9.886	1.5	H2-1
25	25	L4X4X6	0.406	0	72	0.127	0	z	72	88.147	92.664	4.398	9.886	1.5	H2-1
26	26	PL3/8"x6	0.122	0.167	11	0.311	0	y	71	70.011	72.9	0.57	9.113	1.54	H1-1b
27	27	PL3/8"x6	0.1	0.13	7	0.13	0	y	51	70.739	72.9	0.57	9.113	1.38	H1-1b
28	32	HSS3.500X0.216	0.099	0.25	3	0.107	7.75		3	51.941	78.624	6.899	6.899	2.042	H1-1b
29	33	PL3/8"x6	0.12	0.067	13	0.365	0.067	y	64	63.715	72.9	0.57	9.113	1.561	H1-1b
30	34	PL3/8"x6	0.148	0.273	3	0.326	0.273	y	45	65.156	72.9	0.57	9.113	2.717	H1-1b
31	35	PL3/8"x6	0.144	0.167	10	0.223	0	y	45	70.011	72.9	0.57	9.113	1.49	H1-1b
32	36	PL3/8"x6	0.114	0.13	13	0.14	0	y	53	70.739	72.9	0.57	9.113	1.372	H1-1b
33	37	PL3/8"x6	0.098	0.067	12	0.321	0.067	y	44	63.715	72.9	0.57	9.113	2.027	H1-1b
34	38	PL3/8"x6	0.188	0.273	3	0.428	0.273	y	62	65.156	72.9	0.57	9.113	3	H1-1b
35	39	PL3/8"x6	0.151	0.167	2	0.314	0	y	63	70.011	72.9	0.57	9.113	1.523	H1-1b
36	40	PL3/8"x6	0.095	0.13	11	0.13	0	y	55	70.739	72.9	0.57	9.113	1.384	H1-1b
37	45	HSS3.500X0.216	0.106	0.25	8	0.113	7.75		7	51.941	78.624	6.899	6.899	2.101	H1-1b
38	46	PL3/8"x6	0.102	0.067	5	0.365	0.067	y	68	63.715	72.9	0.57	9.113	1.601	H1-1b
39	47	PL3/8"x6	0.187	0.273	8	0.327	0.273	y	38	65.156	72.9	0.57	9.113	2.921	H1-1b
40	48	PL3/8"x6	0.186	0.167	2	0.224	0	y	49	70.011	72.9	0.57	9.113	1.49	H1-1b
41	49	PL3/8"x6	0.096	0.13	6	0.14	0	y	57	70.739	72.9	0.57	9.113	1.375	H1-1b
42	50	PL3/8"x6	0.103	0.067	3	0.321	0.067	y	48	63.715	72.9	0.57	9.113	1.741	H1-1b
43	51	PL3/8"x6	0.22	0.273	7	0.427	0.273	y	67	65.156	72.9	0.57	9.113	3	H1-1b
44	52	PL3/8"x6	0.163	0.167	7	0.314	0	y	67	70.011	72.9	0.57	9.113	1.543	H1-1b
45	53	PL3/8"x6	0.103	0.13	3	0.129	0	y	59	70.739	72.9	0.57	9.113	1.38	H1-1b
46	58	PIPE_2.5	0.167	7.75	5	0.143	0.25		12	30.038	50.715	3.596	3.596	1.897	H1-1b
47	61	PIPE_2.0	0.352	5.5	12	0.1	5.5		11	14.916	32.13	1.872	1.872	3	H1-1b
48	64	PIPE_2.0	0.32	5.5	5	0.14	5.5		6	14.916	32.13	1.872	1.872	3	H1-1b
49	67	PIPE_2.0	0.324	5.5	11	0.111	5.5		12	14.916	32.13	1.872	1.872	3	H1-1b
50	68	PIPE_2.5	0.216	7.75	9	0.148	7.75		3	30.038	50.715	3.596	3.596	1.947	H1-1b
51	71	PIPE_2.0	0.405	5.5	3	0.123	5.5		3	14.916	32.13	1.872	1.872	3	H1-1b
52	74	PIPE_2.0	0.404	5.5	9	0.164	5.5		9	14.916	32.13	1.872	1.872	3	H1-1b
53	77	PIPE_2.0	0.393	5.5	3	0.105	5.5		4	14.916	32.13	1.872	1.872	2.597	H1-1b
54	78	PIPE_2.5	0.22	7.75	13	0.179	0.25		8	30.038	50.715	3.596	3.596	1.948	H1-1b
55	81	PIPE_2.0	0.456	5.5	8	0.137	5.5		7	14.916	32.13	1.872	1.872	3	H1-1b
56	84	PIPE_2.0	0.404	5.5	13	0.183	5.5		13	14.916	32.13	1.872	1.872	3	H1-1b
57	87	PIPE_2.0	0.417	5.5	7	0.136	5.5		8	14.916	32.13	1.872	1.872	3	H1-1b
58	88	PL3/8"x6	0.268	0.417	4	0.018	0.417	y	15	65.156	72.9	0.57	9.113	2.741	H1-1b
59	89	PL3/8"x6	0.353	0.167	5	0.013	0	z	6	70.011	72.9	0.57	9.113	1.497	H1-1b
60	90	PL3/8"x6	0.336	0.273	8	0.024	0.417	y	14	65.156	72.9	0.57	9.113	3	H1-1b
61	91	PL3/8"x6	0.327	0.167	6	0.014	0	z	10	70.011	72.9	0.57	9.113	1.52	H1-1b
62	94	PL3/8"x6	0.352	0.417	8	0.018	0.417	y	19	65.156	72.9	0.57	9.113	2.657	H1-1b
63	95	PL3/8"x6	0.448	0.167	9	0.013	0	z	10	70.011	72.9	0.57	9.113	1.467	H1-1b
64	96	PL3/8"x6	0.256	0.273	12	0.024	0.417	y	17	65.156	72.9	0.57	9.113	3	H1-1b
65	97	PL3/8"x6	0.318	0.167	9	0.016	0	z	2	70.011	72.9	0.57	9.113	1.465	H1-1b
66	100	PL3/8"x6	0.316	0.417	13	0.019	0.417	z	2	65.156	72.9	0.57	9.113	3	H1-1b
67	101	PL3/8"x6	0.454	0.167	13	0.015	0	z	2	70.011	72.9	0.57	9.113	1.491	H1-1b
68	102	PL3/8"x6	0.317	0.417	2	0.024	0.417	y	21	65.156	72.9	0.57	9.113	2.449	H1-1b
69	103	PL3/8"x6	0.388	0.167	2	0.013	0	z	6	70.011	72.9	0.57	9.113	1.538	H1-1b
70	106	L2.5x2.5x3	0.194	0	3	0.048	4.375	z	68	15.632	29.192	0.873	1.786	1.5	H2-1
71	107	L2.5x2.5x3	0.24	0	8	0.048	4.375	z	72	15.632	29.192	0.873	1.786	1.5	H2-1
72	108	L2.5x2.5x3	0.185	0	12	0.048	4.375	z	64	15.632	29.192	0.873	1.786	1.5	H2-1

Envelope NONE Member Cold Formed Steel Code Checks

No Data to Print...

EXHIBIT 10

Construction Drawings

DISH WIRELESS, LLC. SITE ID:

BOBDL00138A

DISH WIRELESS, LLC. SITE ADDRESS:

128 R CREAMERY ROAD
DURHAM, CT 06422

CONNECTICUT CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS
MECHANICAL	2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS
ELECTRICAL	2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS

SHEET INDEX

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED TOWER PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED CIENA BOX (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

SITE PHOTO

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

SITE INFORMATION

PROPERTY OWNER:	RISING SUN TOWER LLC
ADDRESS:	191 DASHER CIRCLE AIKEN, SC 29803
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT46140-A
TOWER APP NUMBER:	153564
COUNTY:	MIDDLESEX
LATITUDE (NAD 83):	41° 26' 28.9" N 41.44135244 N
LONGITUDE (NAD 83):	72° 41' 46.1" W 72.69614661 W
ZONING JURISDICTION:	MIDDLESEX COUNTY
ZONING DISTRICT:	NOT AVAILABLE
PARCEL NUMBER:	100-30
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V-B
POWER COMPANY:	T.B.D.
FIBER COMPANY:	T.B.D.

PROJECT DIRECTORY

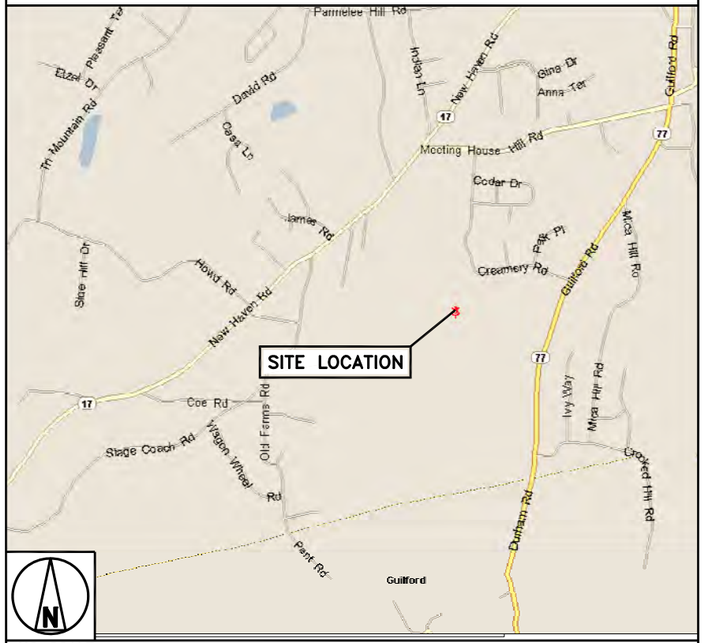
APPLICANT:	DISH WIRELESS, LLC. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	SBA COMMUNICATAIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	RYAN LYNCH RYAN.LYNCH@DISH.COM
CONST. MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT TAKE I-91 S AND CT-9 S TO CT-17 S IN MIDDLETOWN. TAKE EXIT 13 FROM CT-9 S CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON USE THE RIGHT 2 LANES TO MERGE WITH I-91 S TOWARD HARTFORD KEEP LEFT TO STAY ON I-91 S USE THE LEFT 2 LANES TO TAKE EXIT 22S TO MERGE WITH CT-9 S TOWARD MIDDLETOWN/OLD SAYBROOK TAKE EXIT 13 FOR CT-17 S TOWARD NEW HAVEN FOLLOW CT-17 S TO YOUR DESTINATION IN DURHAM CONTINUE ONTO CT-17 S PASS BY KFC (ON THE LEFT IN 0.8 MI) TURN LEFT ONTO MEETING HOUSE HILL RD TURN RIGHT ONTO CREAMERY RD TURN RIGHT

VICINITY MAP



dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

6/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
AN	SRB	MDW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	5/5/21	ISSUED FOR REVIEW
0	6/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149488.001.01

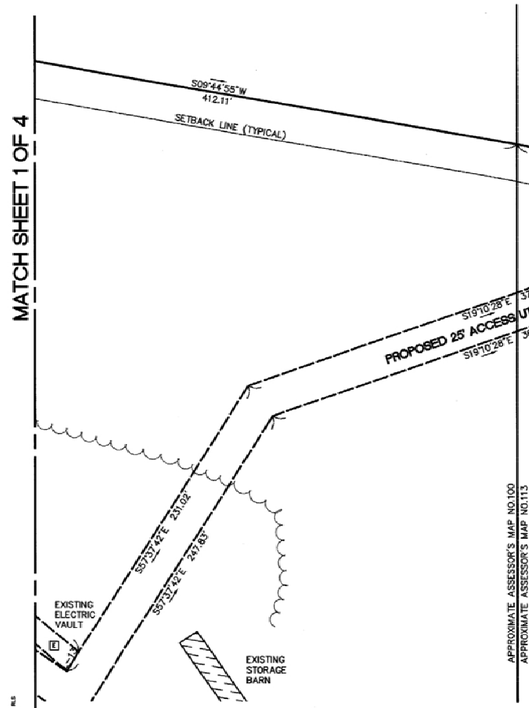
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

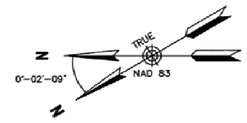
SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

LINE TABLE		
LINE	LENGTH	BEARING
L-1	14.85'	N84°13'42"E
L-2	52.69'	N06°04'57"E
L-3	34.10'	N84°13'42"E
L-4	59.41'	N06°04'57"E
L-5	81.36'	N46°04'32"E
L-6	75.91'	N46°04'32"E
L-7	26.39'	S19°27'41"W
L-8	26.96'	S19°27'41"W
L-9	19.15'	S19°27'41"W
L-10	4.58'	S19°27'41"W
L-11	39.95'	N87°30'13"E
L-12	29.87'	N87°30'13"E
L-13	15.15'	N57°37'42"W

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CH BEARING	CHORD
C-1	90°00'00"	6.50'	10.21'	N22°07'42"W	9.19'
C-2	26°47'22"	167.00'	78.08'	S74°06'32"W	77.37'
C-3	26°47'22"	142.00'	66.39'	S74°06'32"W	65.79'





THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS." JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 1999, AND INCLUDES ITEMS 2-5, 8-11 AND 13 OF TABLE A THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA, NSPS AND ACSM AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT THE SURVEY MEASUREMENTS WERE MADE IN ACCORDANCE WITH THE "MINIMUM ANGLE, DISTANCE, AND CLOSURE REQUIREMENTS FOR SURVEY MEASUREMENTS WHICH CONTROL LAND BOUNDARIES FOR ALTA/ACSM LAND TITLE SURVEYS."

THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THRU 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES-"STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. THIS IS A DEPENDENT RESURVEY CONFORMING TO A HORIZONTAL ACCURACY STANDARD CLASS A-2.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS PLAN IS NOT VALID WITHOUT A LIVE SIGNATURE AND EMBOSSED SEAL.

4/3/21

ROBERT L. SAUNDERS, L.S. #17253 DATE

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
54 Tuttle Place
Middletown, Connecticut 06457
860 632 1500 • FAX 860 632 7879

PCS
Crossroads Corporate Center
1 International Blvd.
8th Floor, Suite 800
Mahwah, NJ 07495

NOT TO SCALE

Revision	Date	Appvd.
Designed by	Drawn by	Checked by
CAD checked by	Approved by	
Scale 1"=40'	Date February 21, 2000	

Project Title

Lawson Property
Creamery Road

Durham, Connecticut

Issued for

Client Review

Drawing Title

Limited Boundary Map

Drawing Number

Sv-2

Sheet of 2 4

Project Number 40273.526

40273-526sla

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

STATE OF CONNECTICUT
No. 27824
LICENSED PROFESSIONAL ENGINEER
6/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
AN	SRB	MDW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	5/8/21	ISSUED FOR REVIEW
0	6/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

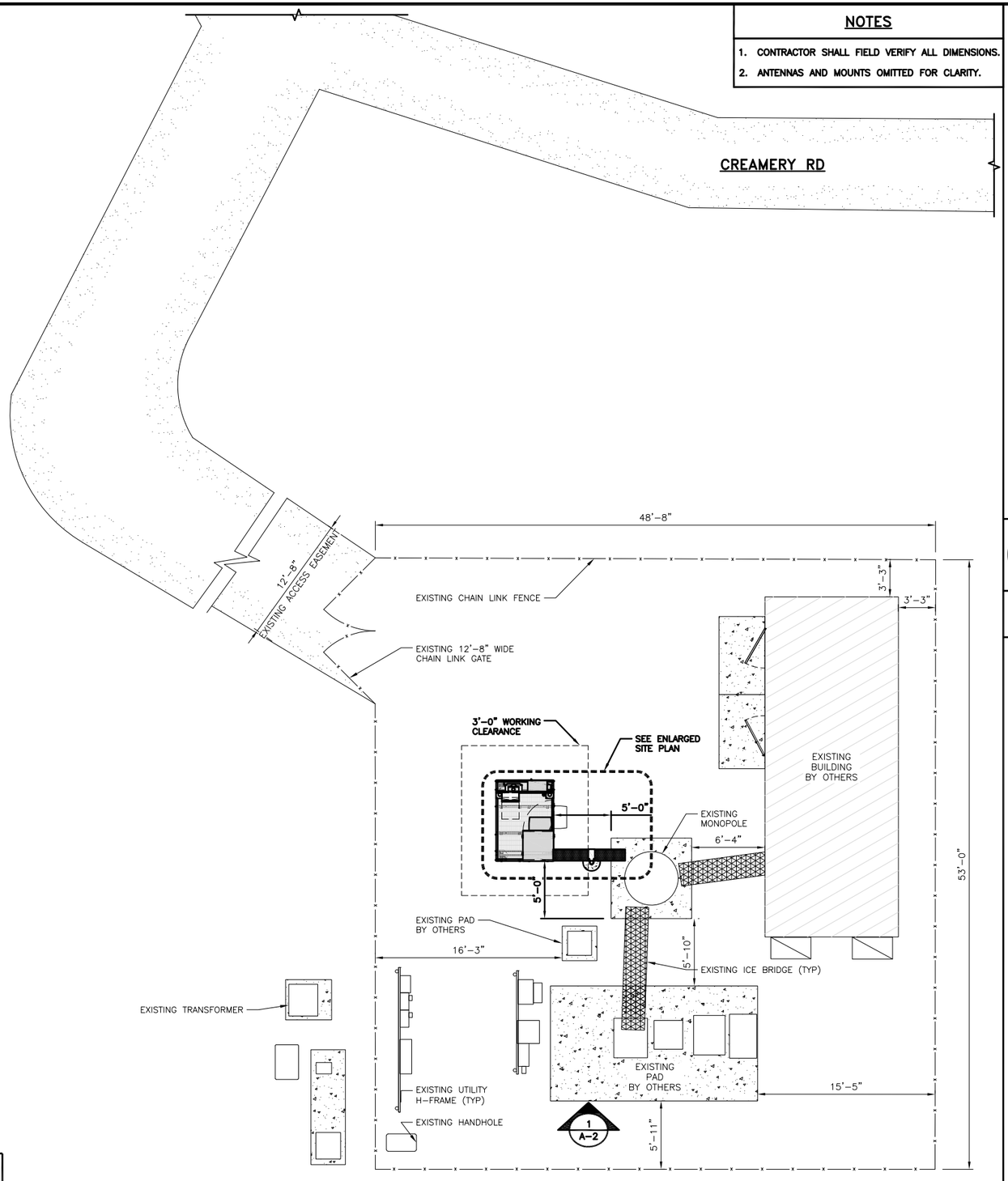
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



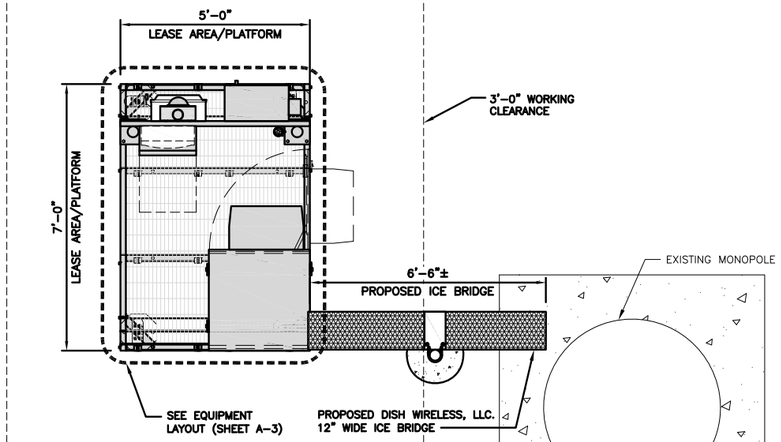
OVERALL SITE PLAN

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

2

NOT USED

3

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PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

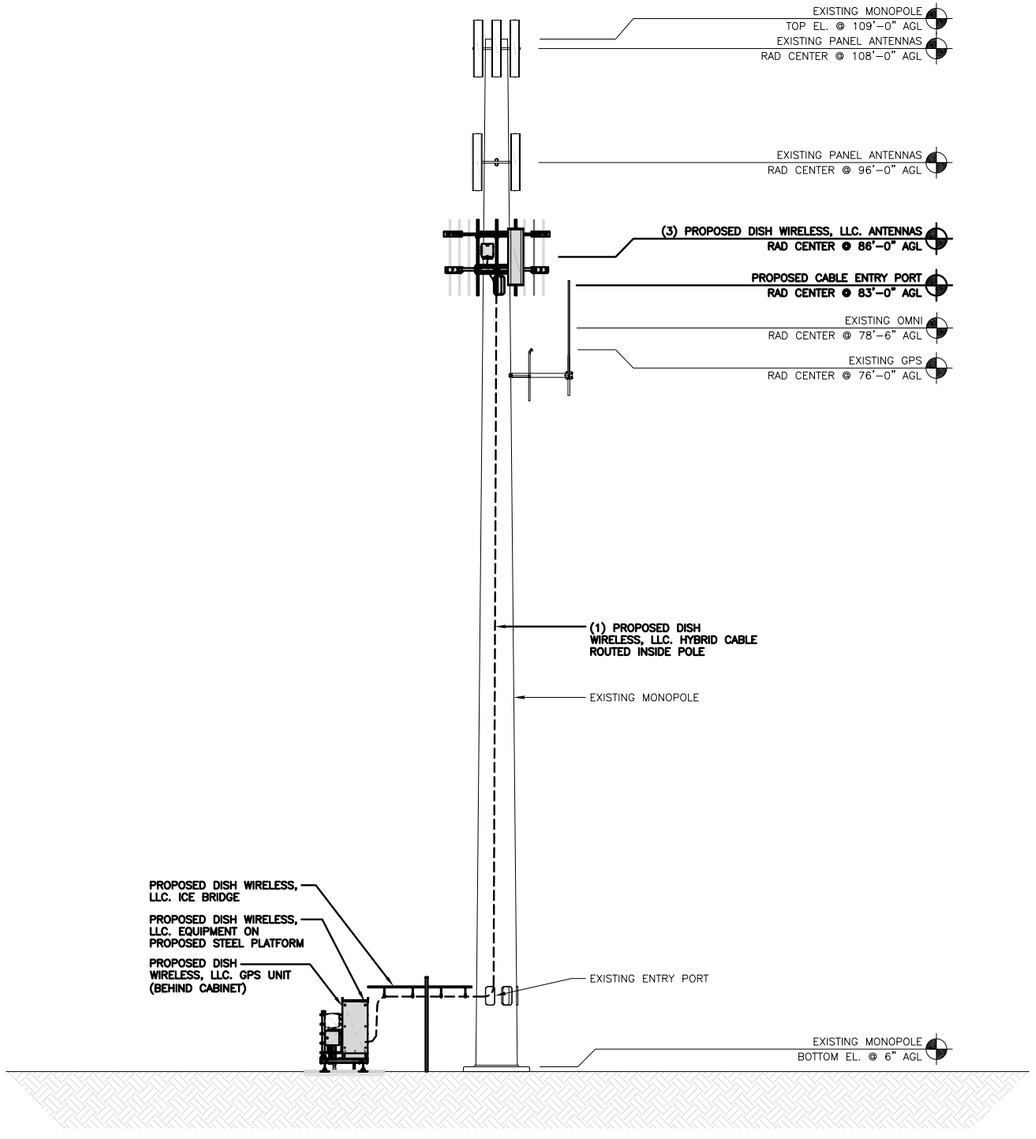
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

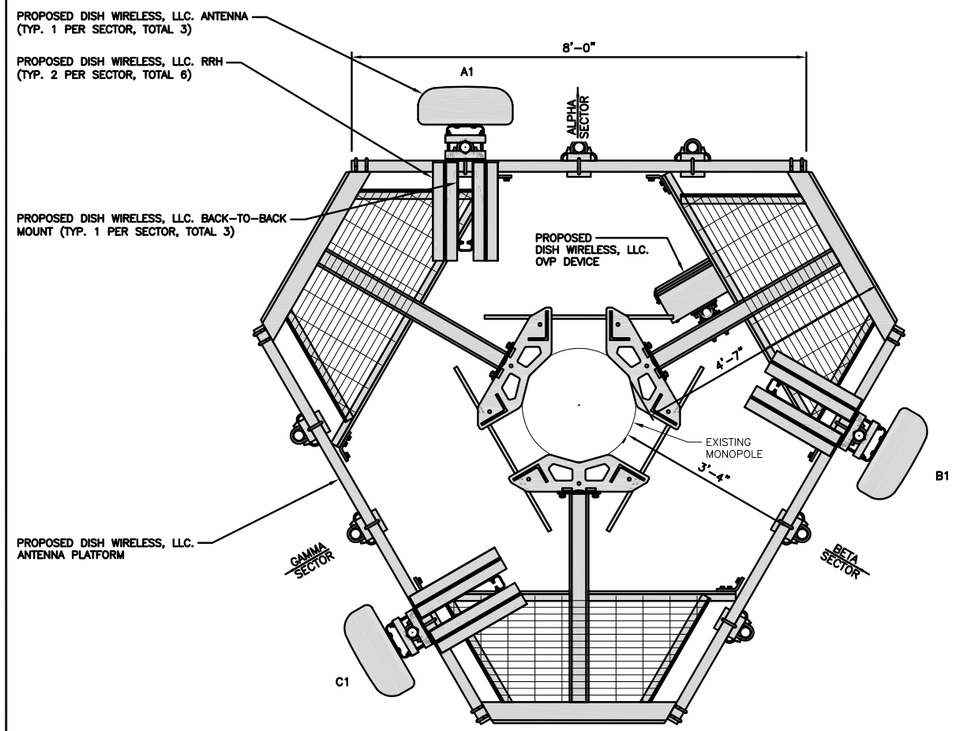
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS



PROPOSED SOUTH ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

1



ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'-0"

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	0°	86'–0"	(1) HIGH–CAPACITY HYBRID CABLE (116' LONG)
BETA	B1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	120°	86'–0"	
GAMMA	C1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	240°	86'–0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025–B604	5G
	A1	FUJITSU – TA08025–B605	5G
BETA	B1	FUJITSU – TA08025–B604	5G
	B1	FUJITSU – TA08025–B605	5G
GAMMA	C1	FUJITSU – TA08025–B604	5G
	C1	FUJITSU – TA08025–B605	5G

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

ANTENNA SCHEDULE

NO SCALE

3

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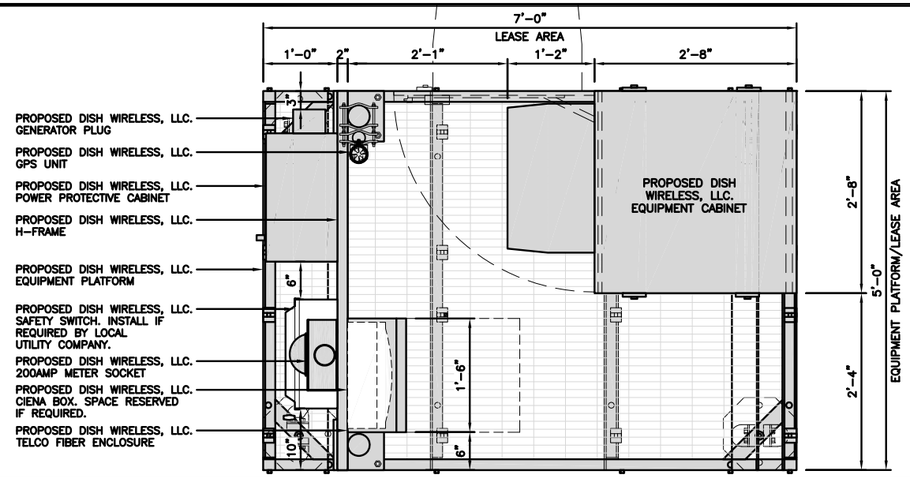
A&E PROJECT NUMBER
149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2

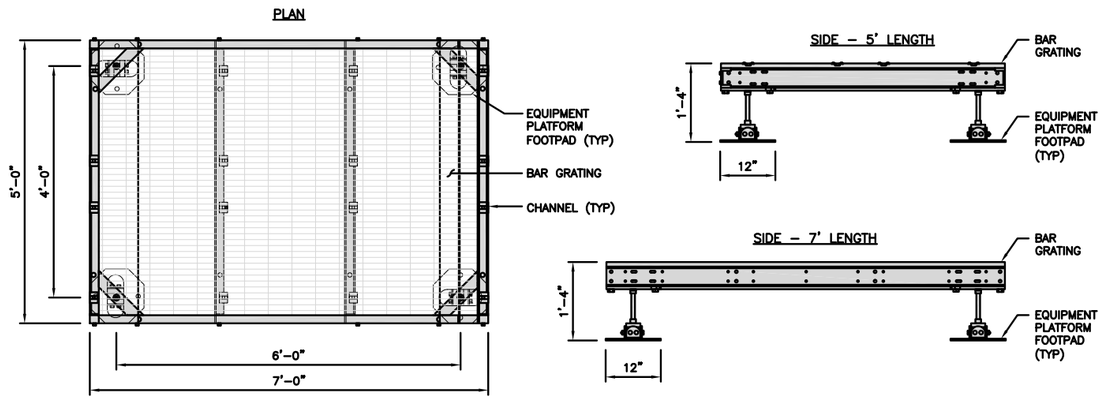


PLATFORM EQUIPMENT PLAN

12" 9" 6" 3" 0 1' 2"
1"=1'-0"

1

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

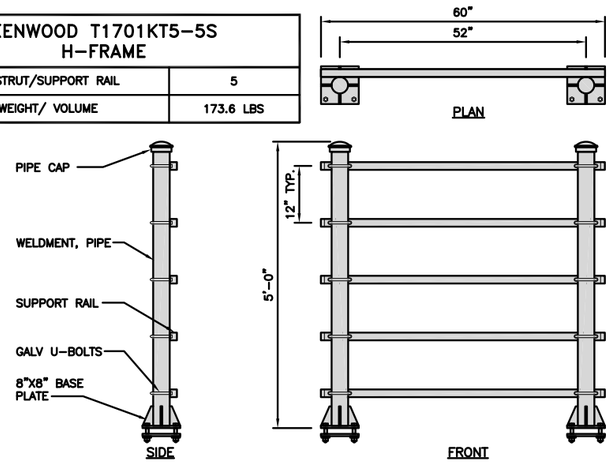


PLATFORM DETAIL

NO SCALE

2

KENWOOD T1701KT5-5S H-FRAME	
UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.6 LBS



H-FRAME DETAIL

NO SCALE

3

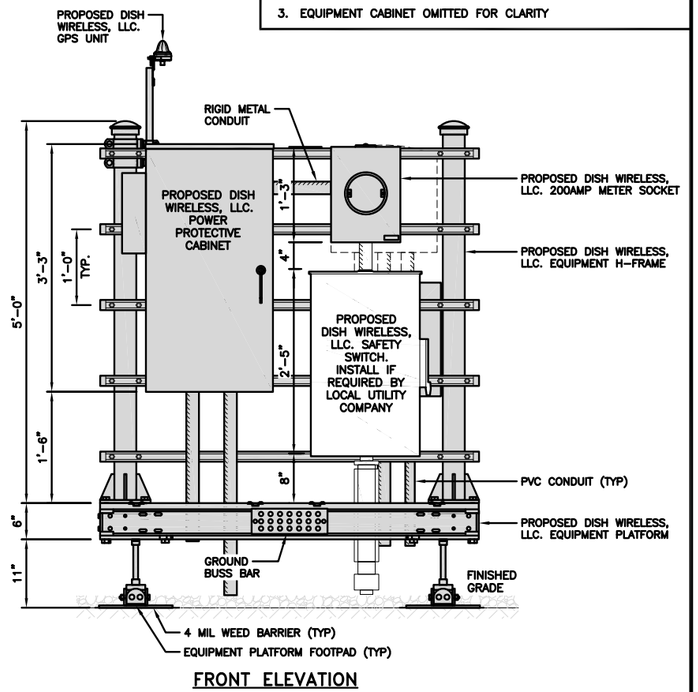
NOT USED

NO SCALE

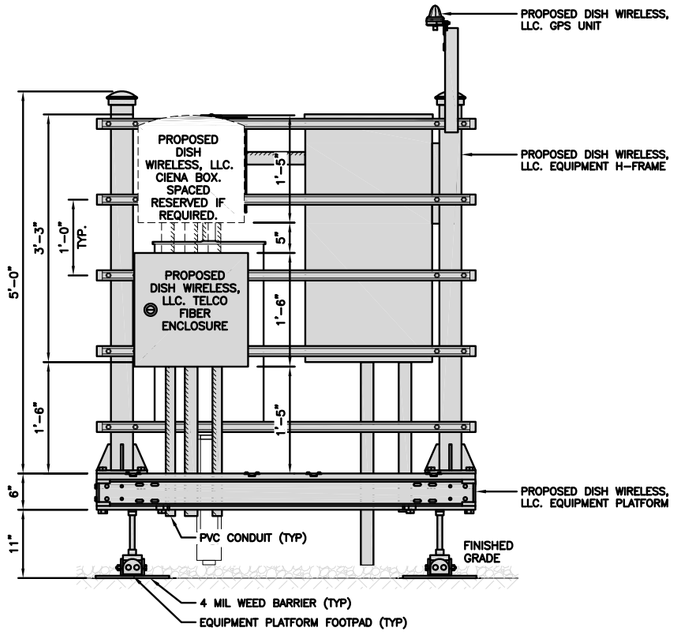
4

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH WIRELESS, LLC. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2"
1"=1'-0"

5

dish wireless.
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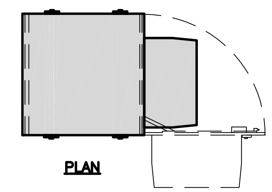
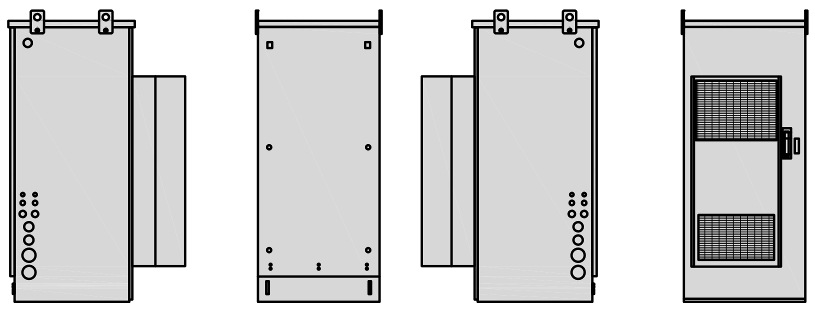
PROJECT INFORMATION
BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

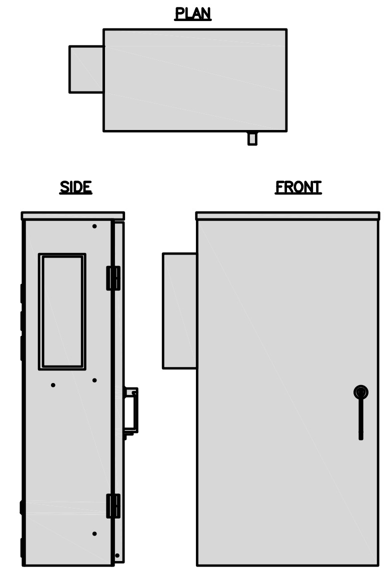
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS





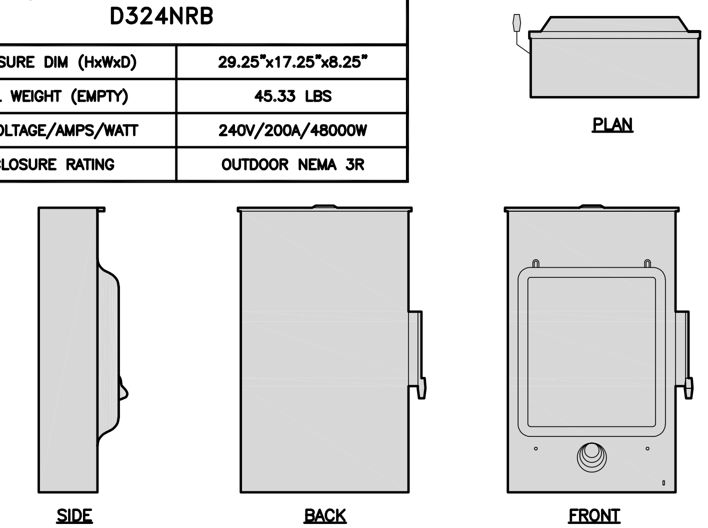
CABINET DETAIL — NO SCALE — 1

RAYCAP RDIAC–6512–P–240–MTS POWER & TELCO PROTECTION CABINET	
DIMENSIONS (HxWxD)	40"x20"x10"
WEIGHT/ VOLUME	124 LBS
MANUAL TRANSFER SWITCH	200A
LOAD CENTER	30 POSITION
MAIN BREAKER	200A, 65kA AIC
GENERATOR RECEPTACLE	CAMLOCK
NEMA RATING	3R POWDER COATED ALUMINUM
SURGE PROTECTION DEVICE	UL 1449 4TH EDITION LISTED



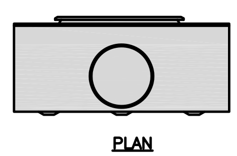
POWER PROTECTION CABINET (PPC) DETAIL — NO SCALE — 2

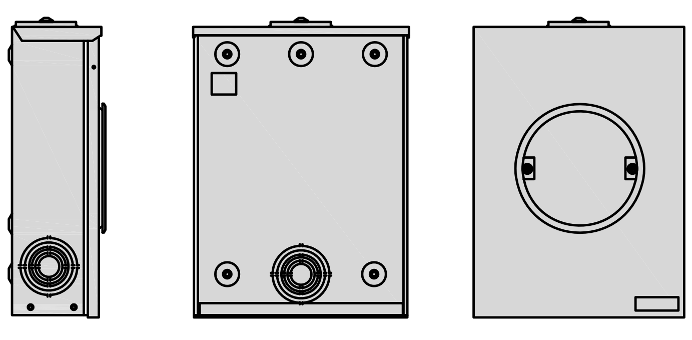
SQUARE D SAFETY SWITCH D324NRB	
ENCLOSURE DIM (HxWxD)	29.25"x17.25"x8.25"
TOTAL WEIGHT (EMPTY)	45.33 LBS
MAX VOLTAGE/AMPS/WATT	240V/200A/48000W
ENCLOSURE RATING	OUTDOOR NEMA 3R



SAFETY SWITCH — NO SCALE — 3

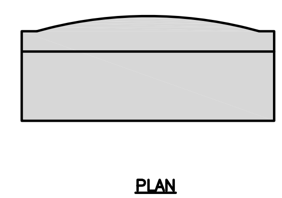
EATON METER SOCKET UNRRS213BEUSE	
METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS

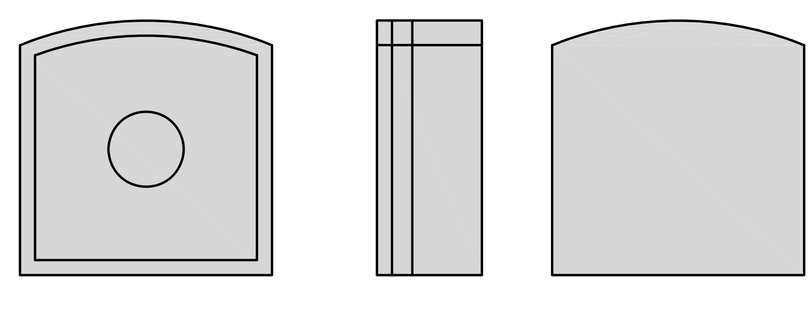




METER SOCKET DETAIL — NO SCALE — 4

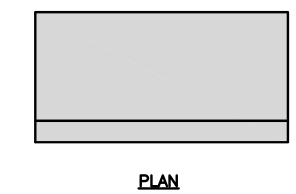
CIENA 3931 SERVICE DELIVERY SWITCH	
DIMENSIONS (HxWxD)	17.0"x16.8"x7.0" 431x427x178mm
WEIGHT	28.6 LBS/13.0 KG
POWER INPUT	60W MAX

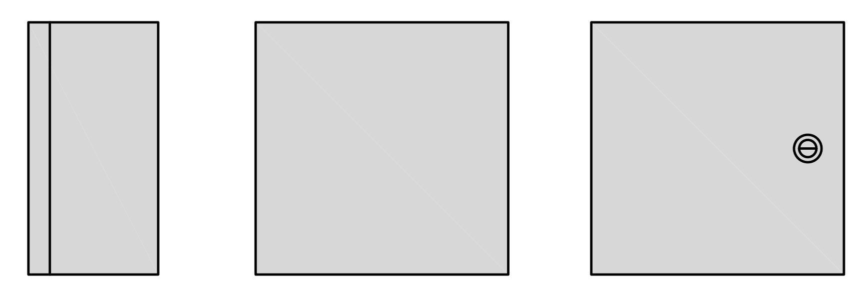




CIENA DETAIL — NO SCALE — 5

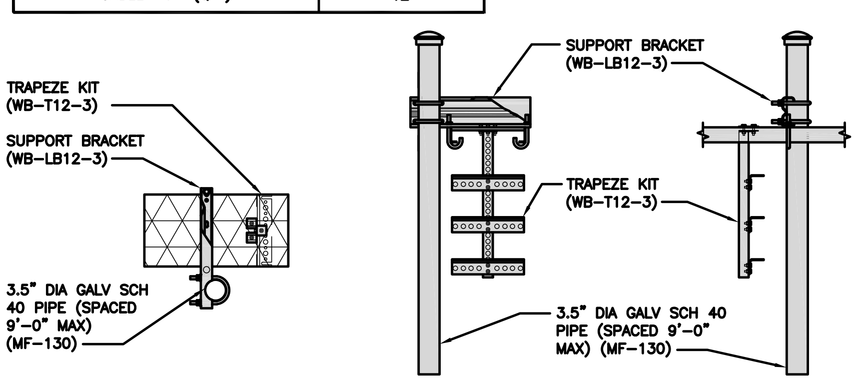
CHARLES FIBER TELCO ENCLOSURE CUBE–MP1818WB–A	
ENCLOSURE DIM (HxWxD)	18.0"x18.0"x9.25"
NEMA RATING	4X
THERMAL	SEALED
MOUNTING BACKBOARD	WOOD



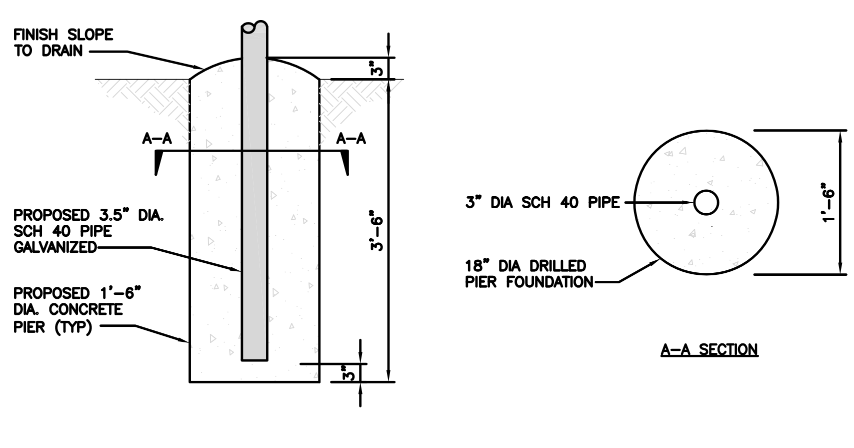


FIBER TELCO ENCLOSURE DETAIL — NO SCALE — 6

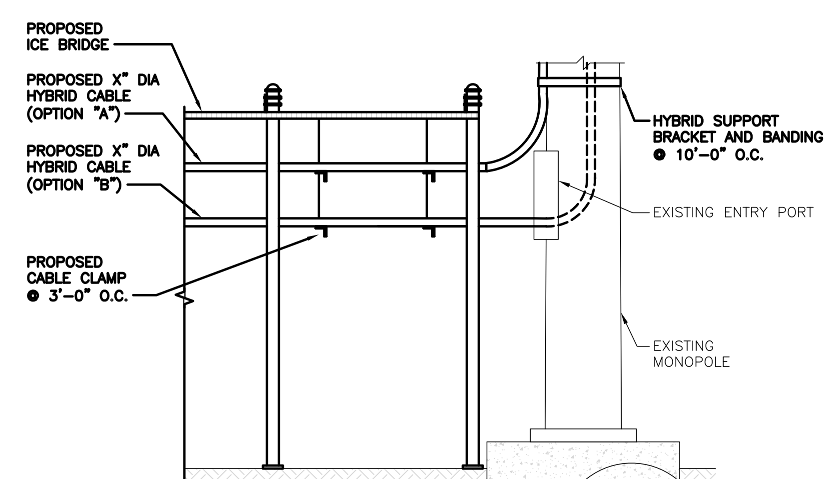
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT		INCLUDED PRODUCTS:	WB–T12–3 TRAPEZE KIT, 3 RUNGS WB–LB12–3 SUPPORT BRACKET MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"
DIMENSIONS (HxL)	160"x10'		
WEIGHT/ VOLUME	325.0 LBS		
CABLE RUN (QTY)	12		



ICE BRIDGE DETAIL — NO SCALE — 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL — NO SCALE — 8



HYBRID CABLE RUN — NO SCALE — 9

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RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A&E PROJECT NUMBER
149488.001.01

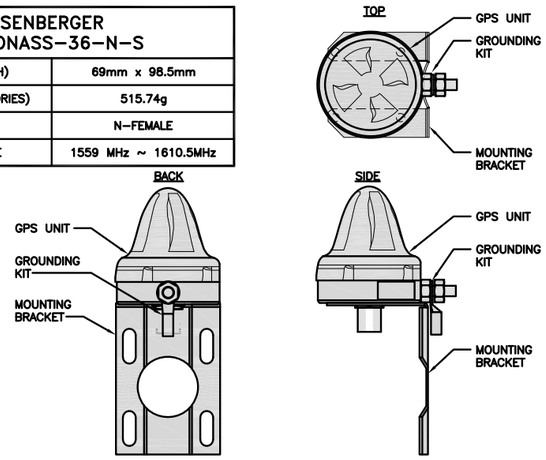
DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

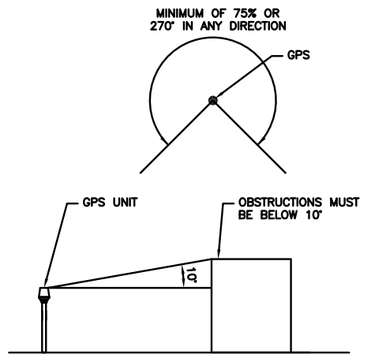
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

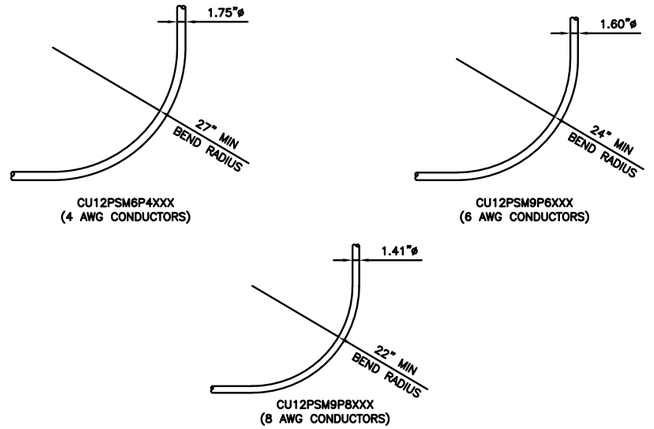
ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES | NO SCALE | 3

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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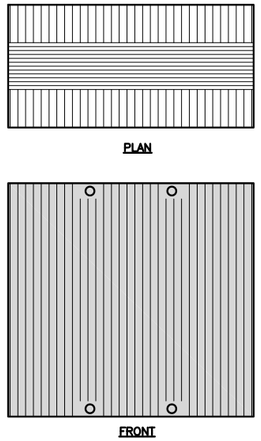
SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

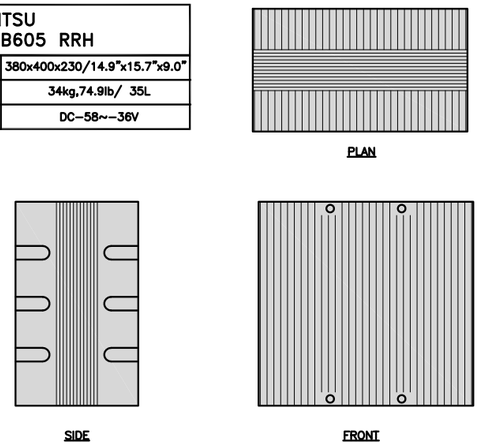
A-5

FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



REMOTE RADIO HEAD DETAIL | NO SCALE | 1

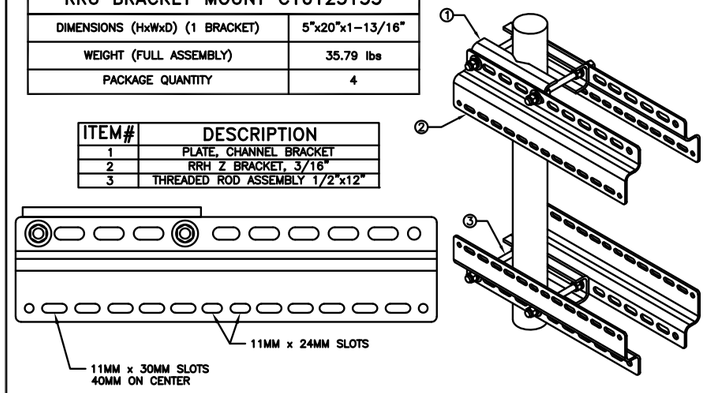
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



REMOTE RADIO HEAD DETAIL | NO SCALE | 2

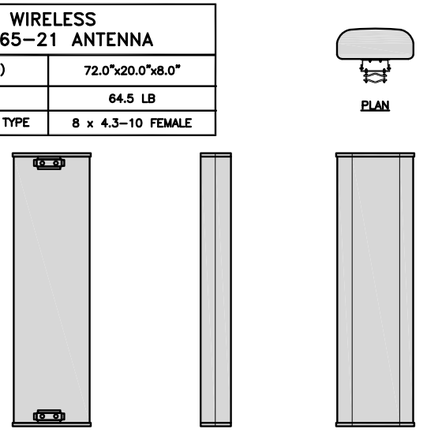
SABRE INDUSTRIES RRU BRACKET MOUNT C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

ITEM#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

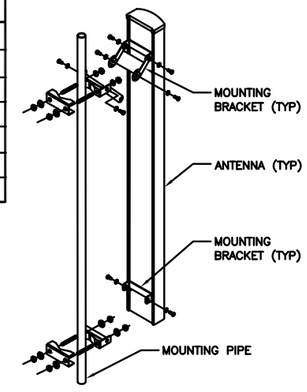
JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



ANTENNA DETAIL | NO SCALE | 4

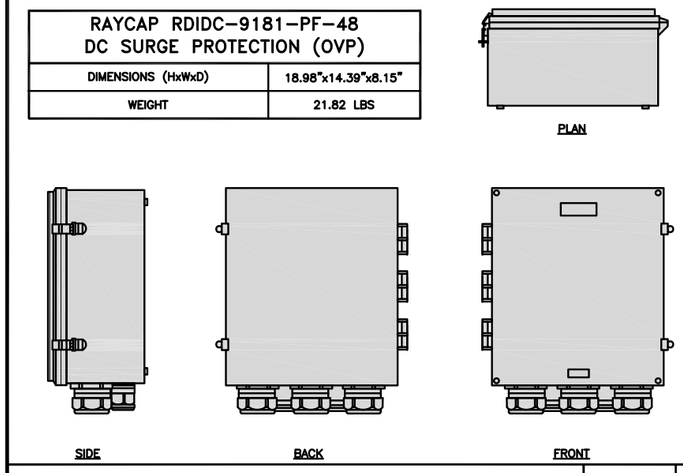
NOT USED | NO SCALE | 5

M04 MOUNTING BRACKET HPA-33R-BUU-H4-K	
WIDTH	5" (135mm)
DEPTH	2" (51mm)
HEIGHT	8" (213mm)
TOTAL WEIGHT (WITH BRACKETS)	1.5 LBS (15.50 Kg)
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1X8-PIN DAISY CHAIN



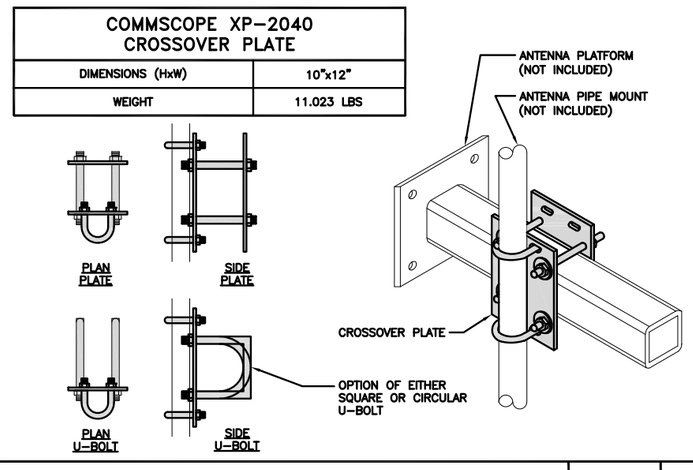
ANTENNA MOUNTING DETAIL | NO SCALE | 6

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



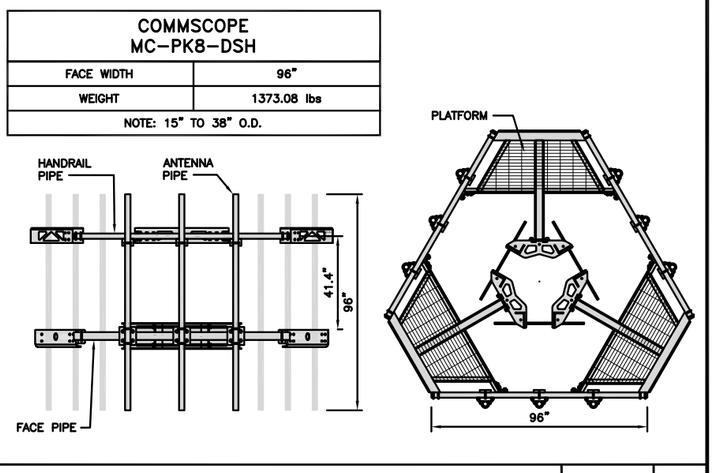
SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS



RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	



ANTENNA PLATFORM DETAIL | NO SCALE | 9

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DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

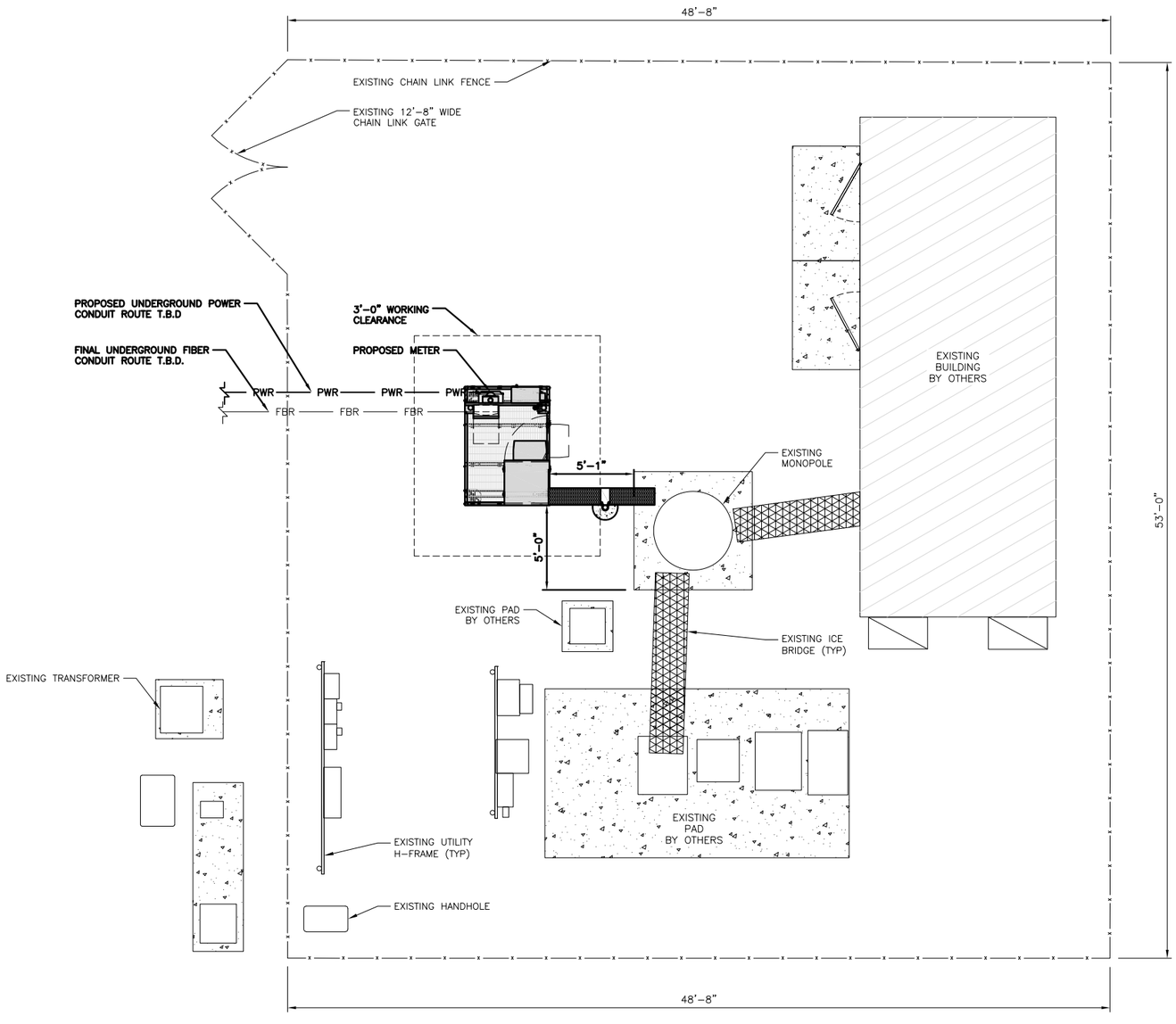
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



UTILITY ROUTE PLAN

4' 2' 0 4' 8'
1/4"=1'-0"

1

DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL CONDUIT TRENCHES IN COMPOUND SHALL BE HAND DUG.

ELECTRICAL NOTES

NO SCALE

2

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PROJECT INFORMATION

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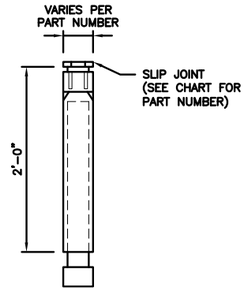
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

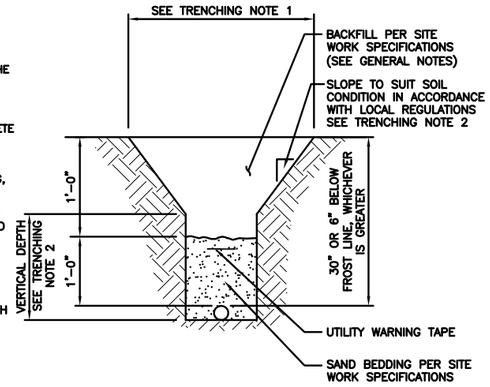


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

EXPANSION JOINT DETAIL | NO SCALE | 1

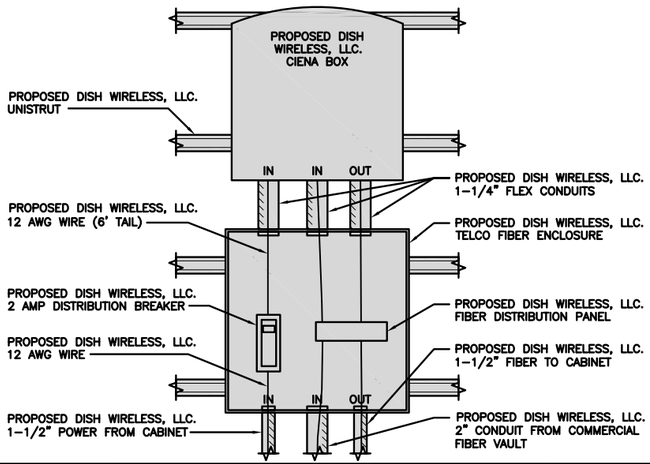
TRENCHING NOTES

1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.

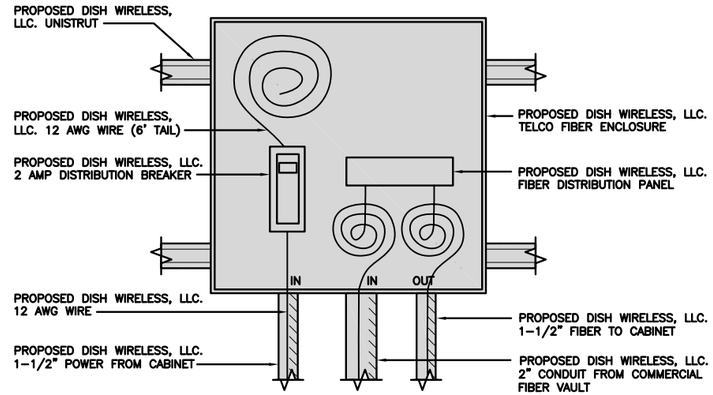


TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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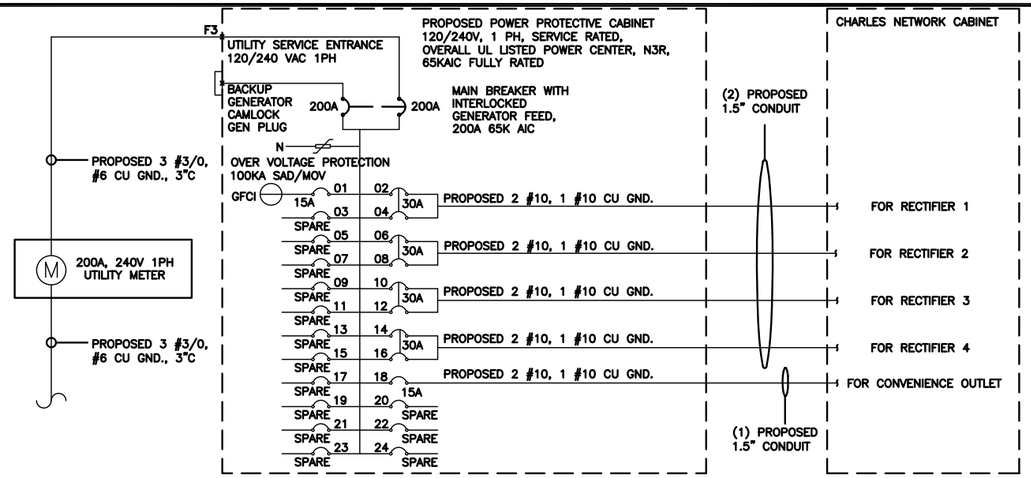
SHEET NUMBER

E-2



NOTES

THERE ARE A TOTAL OF (10) CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT. ADJUSTABLE FACTOR OF 50% PER NEC TABLE 310.15(B)(3)(a) SHALL APPLY.

#10 FOR 15A/1P BREAKER: 0.5 x 40A = 15.0A
#8 FOR 20A-25A/2P BREAKER: 0.5 x 55A = 27.5A
#6 FOR 30A-35A/2P BREAKER: 0.5 x 75A = 37.5A
#4 FOR 40A-45A/2P BREAKER: 0.5 x 95A = 47.5A

CONDUIT SIZING: ASSUME 1.5" EMT
AT 40% FILL PER NEC 358, TABLE 4 – 0.814A SQ. IN AREA

WIRES: USING THWN-2, CU. (INCLUDING 3 GROUND WIRES)
#6 – 0.0507 SQ. IN X 8 = 0.4056 SQ. IN
#8 – 0.0366 SQ. IN X 2 = 0.0732 SQ. IN
#10 – 0.0211 SQ. IN X 4 = 0.0844 SQ. IN <GROUND
#12 – 0.0133 SQ. IN X 1 = 0.0133 SQ. IN <GROUND
TOTAL = 0.5765 SQ. IN

1.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OR (15) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

CONDUIT SIZING: ASSUME 3.0" SCH 40 PVC
AT 40% FILL PER NEC 352,TABLE 4 – 1.216A SQ. IN AREA

WIRES: USING THHN, CU. (INCLUDING 2 GROUND WIRES)
#3/0 – 0.1318 SQ. IN X 3 = 0.3954 SQ. IN
#2 – 0.0521 SQ. IN X 1 = 0.0521 SQ. IN
TOTAL = 0.4475 SQ. IN

3.0" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OR (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

(CHARLES ABB GE INFINITY) WITH STAND ALONE METER 120V240V 1PH SOURCE

NO SCALE | 1

PROPOSED PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
GFCI IN PPC CAB.	1440A		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
–SPARE–				3	B	4			2880	
–SPARE–				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
–SPARE–				7	B	8			2880	
–SPARE–				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
–SPARE–				11	B	12			2880	
–SPARE–				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
–SPARE–				15	B	16			2880	
–SPARE–				17	A	18	15A	1920		CHARLES GFCI OUTLET
–SPARE–				19	B	20				–SPARE–
–SPARE–				21	A	22				–SPARE–
–SPARE–				23	B	24				–SPARE–
VOLT AMPS	1440							12960A	11520	

200A MCB, 1ϕ, 3W, 120/240V	L1	L2	
MB RATING: 65,000 AIC	14400	11520	VOLT AMPS
	120	96	AMPS
	120		MAX AMPS
	150		MAX 125%

PANEL SCHEDULE
(CHARLES ABB GE INFINITY) WITH STAND ALONE METER 120V240V 1PH SOURCE

NO SCALE | 2

NOT USED

NO SCALE | 3

NOT USED

NO SCALE | 4

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RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

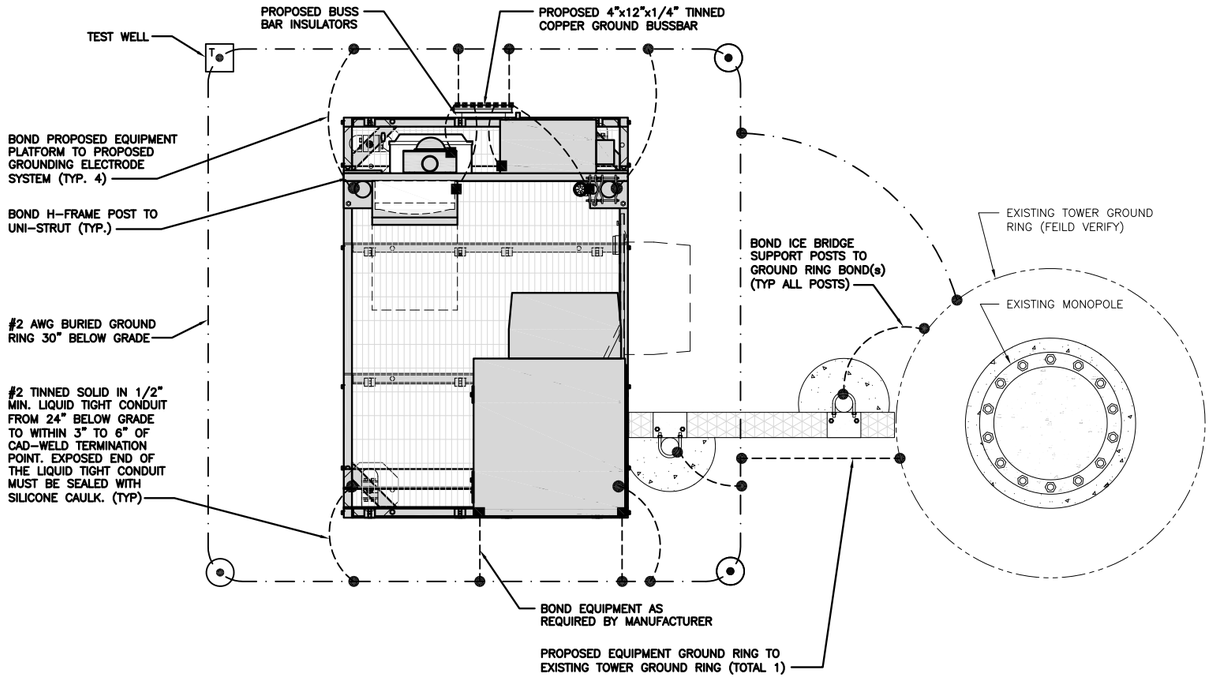
REV	DATE	DESCRIPTION
A	5/8/21	ISSUED FOR REVIEW
0	6/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3

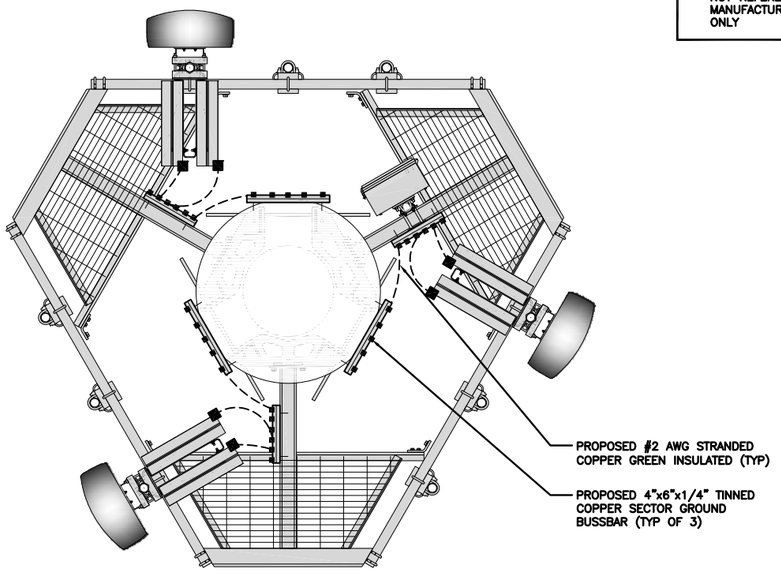


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

1. ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE ONLY



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

EXOTHERMIC CONNECTION
MECHANICAL CONNECTION
GROUND BUS BAR
GROUND ROD
TEST GROUND ROD WITH INSPECTION SLEEVE
#6 AWG STRANDED & INSULATED
#2 AWG SOLID COPPER TINNED
BUSS BAR INSULATOR

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH WIRELESS, LLC. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

(A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(J) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(K) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(L) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(M) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(N) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(P) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(Q) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(R) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

REFER TO DISH WIRELESS, LLC. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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B&T ENGINEERING, INC.
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AN	SRB	MDW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A&E PROJECT NUMBER

149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

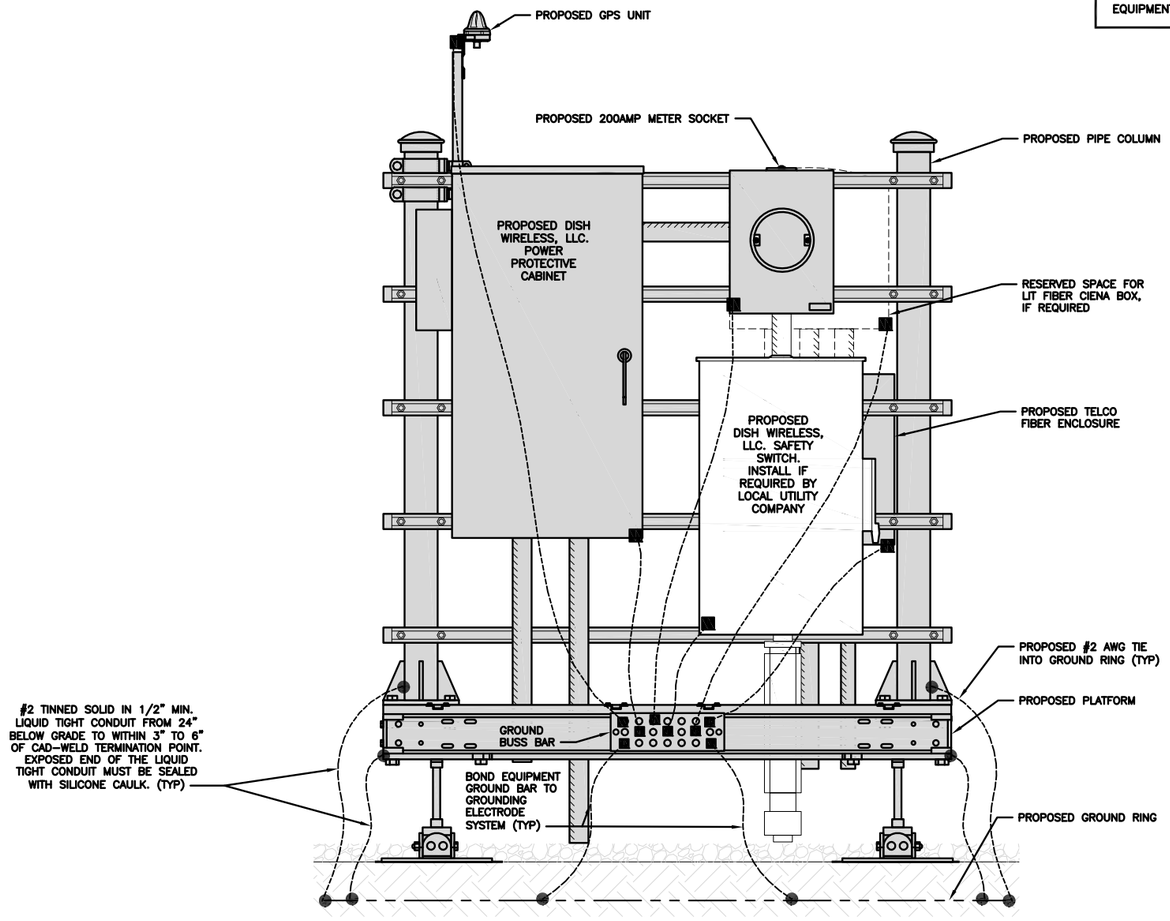
GROUNDING PLANS AND NOTES

SHEET NUMBER

G-1

NOTES

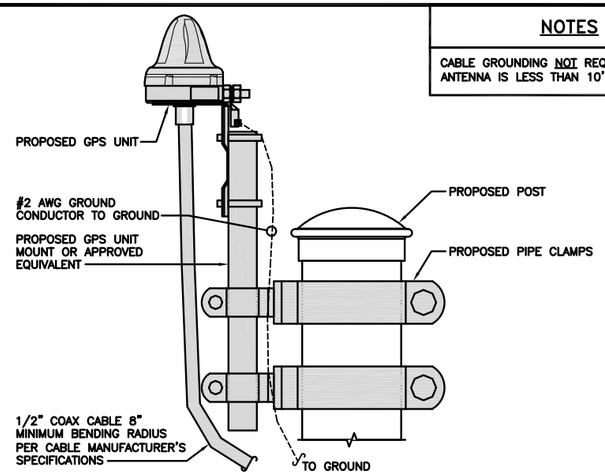
EQUIPMENT CABINET OMITTED FOR CLARITY



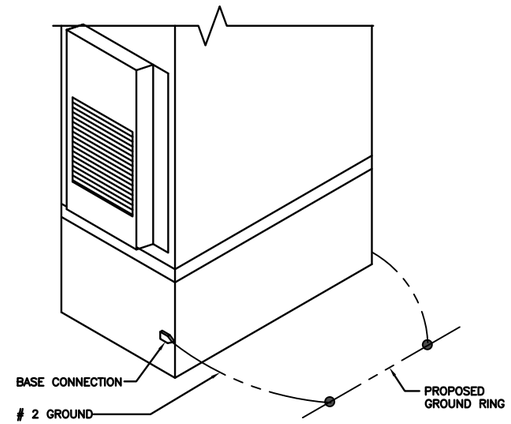
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

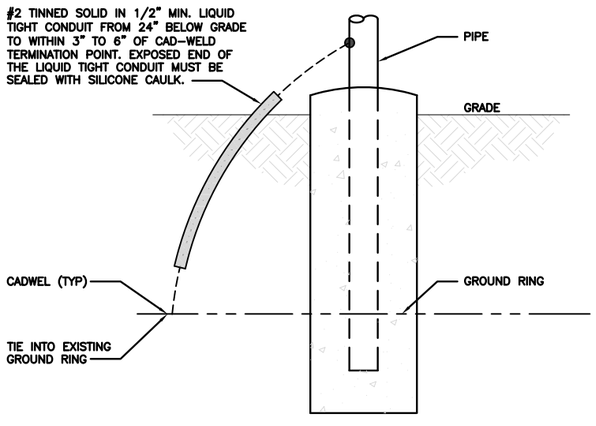
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



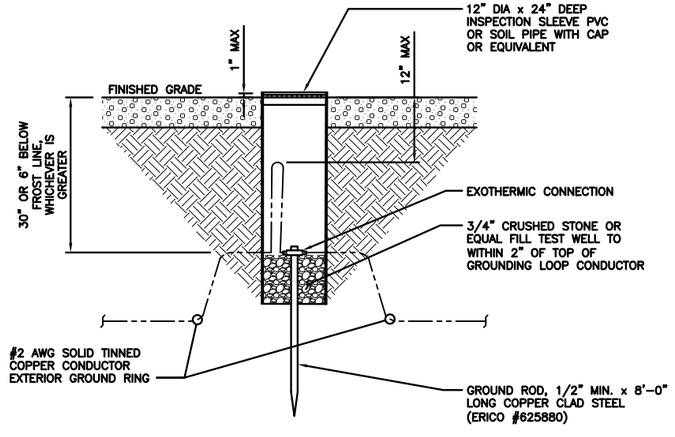
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE | NO SCALE | 5

NOT USED | NO SCALE | 6

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149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

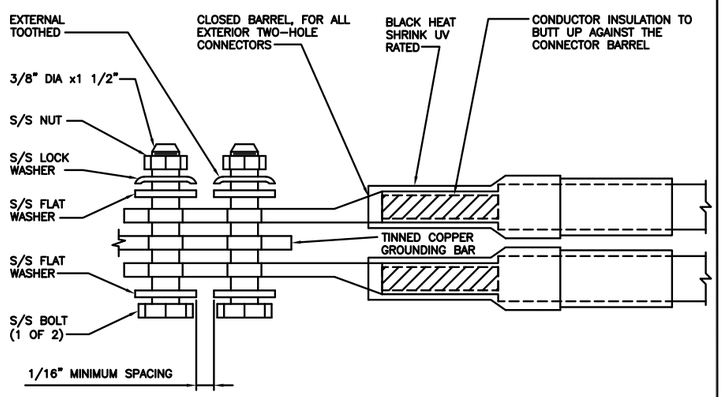
GROUNDING DETAILS

SHEET NUMBER

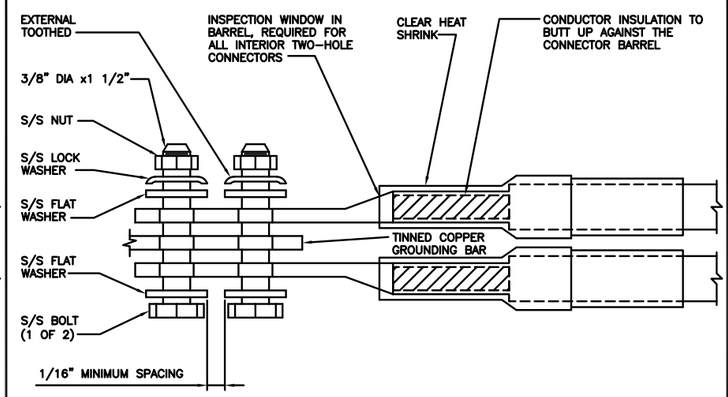
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

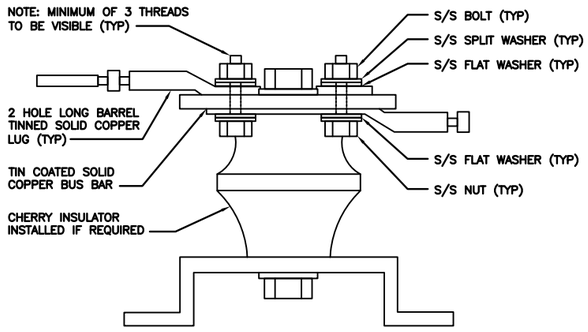
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE
GROUNDING DETAILS

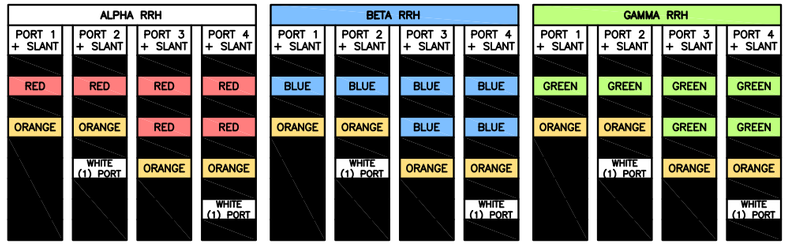
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

3/4" TAPE WIDTHS WITH 3/4" SPACING

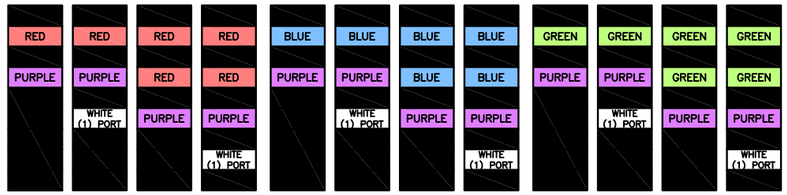
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)



MID-BAND RRH –
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)

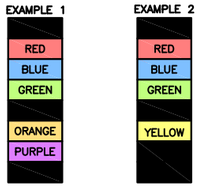


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED AM LONG WITH FREQUENCY BANDS

EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS

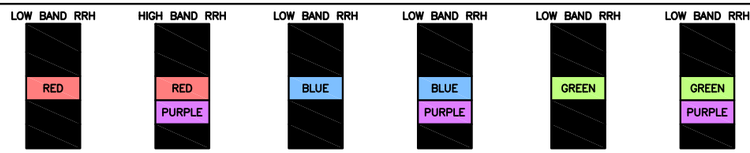


NOTES

1. CONTRACTOR SHALL REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. FINAL RFDS IS IN NEXYSONE.

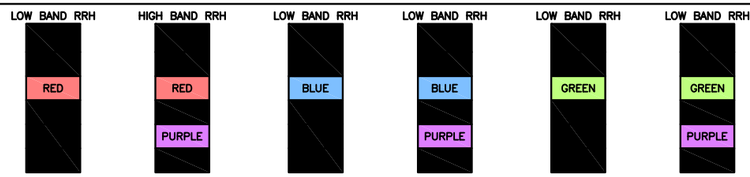
HYBRID/DISCREET CABLES

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

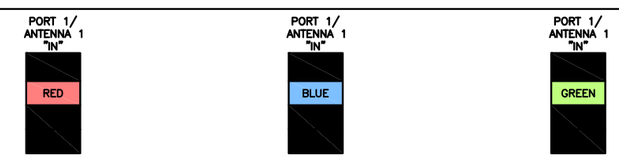


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



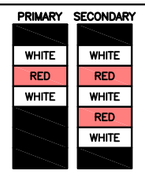
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5-2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE. ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.

MICROWAVE CABINETS WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID'S.



LOW BANDS (N71-N28)
OPTIONAL – (N29)
ORANGE

AWS
(N65+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANTRRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

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STATE OF CONNECTICUT
No. 27824
LICENSED PROFESSIONAL ENGINEER
6/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
AN	SRB	MDW

RFDS REV #: 1.0

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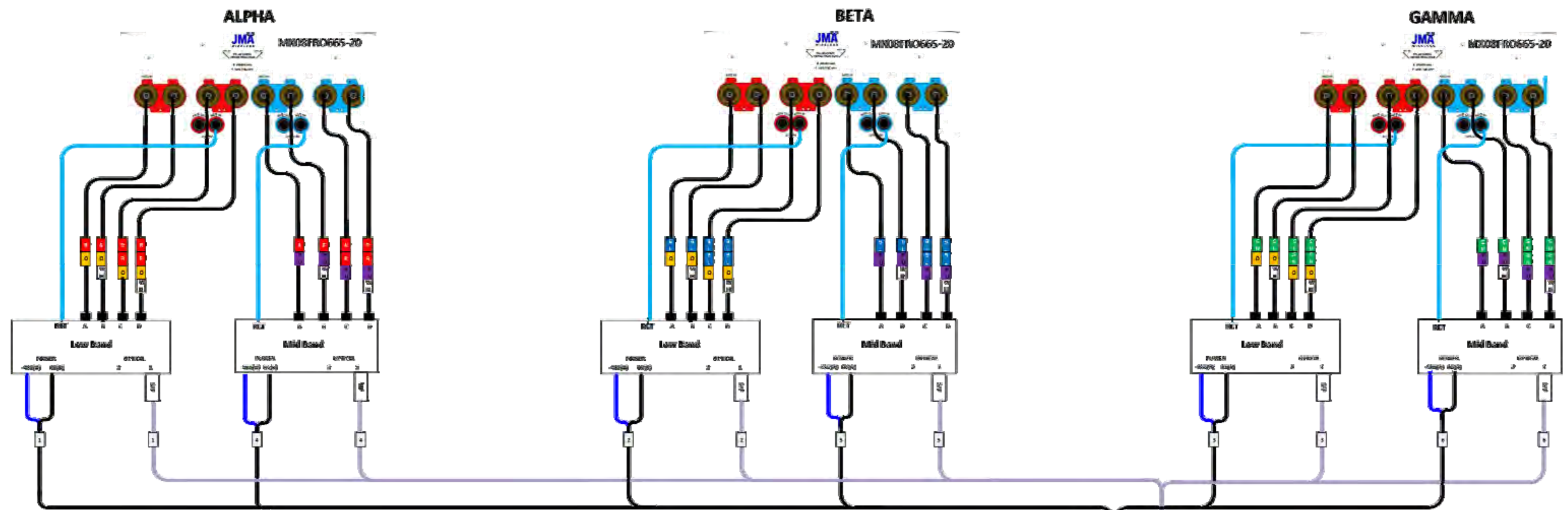
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

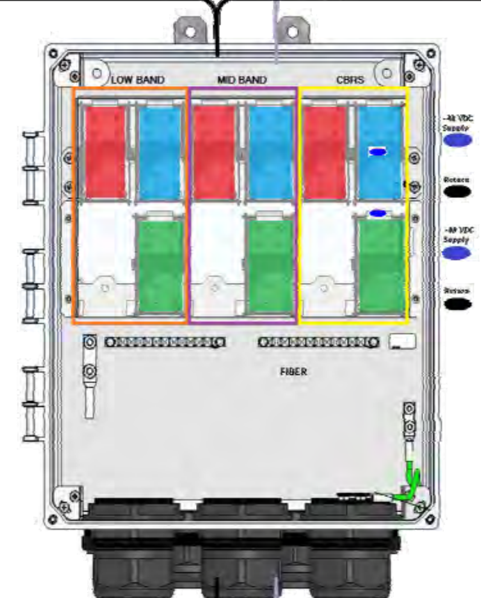
SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1



Fiber Patch Panel

Bottom Row	Pair 1	Pair 2	Pair 3	Pair 10	Open	Open
Middle Row	Pair 4	Pair 5	Pair 6	Pair 11	Open	Open
Top Row	Pair 7	Pair 8	Pair 9	Pair 12	Open	Open



NOTES

1. CONTRACTOR SHALL REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. FINAL RFDS IS IN NEXYSONE.

CSR NCS540		
Port	Interface	Description
0	Gi0/0/0/0	SiteBoss
1	Gi0/0/0/1	CBRS - Alpha
2	Gi0/0/0/2	CBRS - Beta
3	Gi0/0/0/3	CBRS - Gamma
4	Te0/0/0/4	Fujitsu Low-Band RU - Alpha
5	Te0/0/0/5	Fujitsu Mid-Band RU - Alpha
6	Te0/0/0/6	Fujitsu Low-Band RU - Beta
7	Te0/0/0/7	Fujitsu Mid-Band RU - Beta
8	Te0/0/0/8	Fujitsu Low-Band RU - Gamma
9	Te0/0/0/9	Fujitsu Mid-Band RU - Gamma
10	Te0/0/0/10	Fixed Wifi
11	Te0/0/0/11	Fixed Wifi
12	Te0/0/0/12	Fixed Wifi
13	Te0/0/0/13	Fixed Wifi
14	Te0/0/0/14	CBRS1
15	Te0/0/0/15	CBRS2
16	Te0/0/0/16	CBRS3
17	Gi0/0/0/17	SM1 - BMC
18	Gi0/0/0/18	SM2 - BMC
19	Te0/0/019	SM1 - Data 1
20	Te0/0/020	SM1 - Data 2
21	Te0/0/021	SM2 - Data 1
22	Te0/0/022	SM2 - Data 2
23	Te0/0/023	Reserved Uplink (EDC, LDC)
24	Te0/0/024	Blank/Future
25	Te0/0/0/25	Blank/Future
26	Te0/0/0/26	Fiber NIU
27	Te0/0/0/27	Fiber NIU
28	Te0/0/0/28	Blank/Future
29	Te0/0/0/29	Blank/Future

top

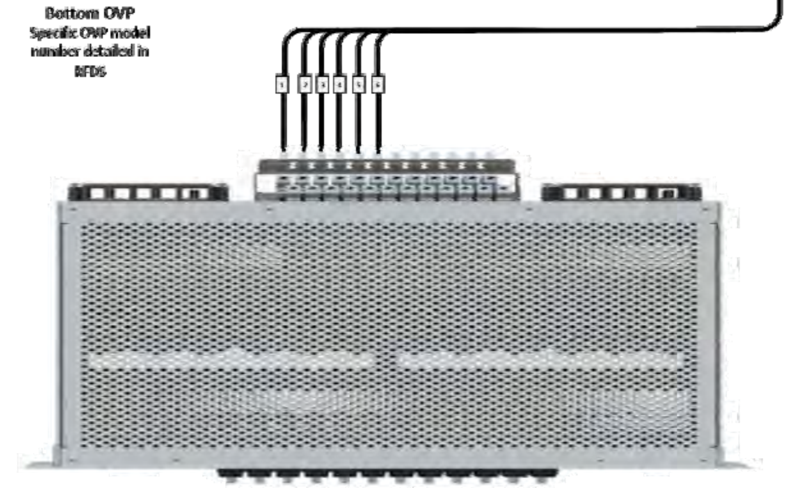
bottom

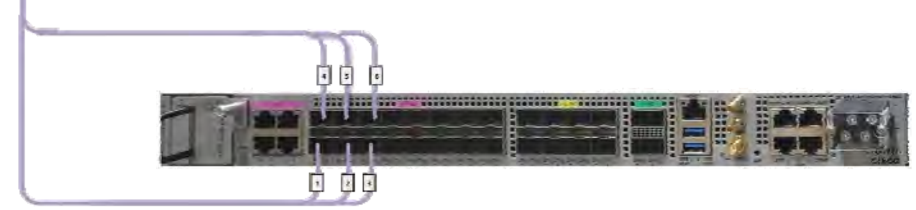
Bottom OVP Layout

Circuit 1	Alpha Low Band
Circuit 2	Beta Low Band
Circuit 3	Gamma Low Band
Circuit 4	Alpha Mid Band
Circuit 5	Beta Mid Band
Circuit 6	Gamma Mid Band
Circuit 7	Alpha CBRS
Circuit 8	Beta CBRS
Circuit 9	Gamma CBRS
Circuit 10	Open
Circuit 11	Open
Circuit 12	Open

5G plumbing diagram JMA MX08FRO665-20 2-2-2(LB+MB)

Bottom OVP Specific OVP model number detailed in RFDS





PLUMBING DIAGRAM

NO SCALE

1

dish wireless.

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6/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
AN	SRB	MDW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	5/8/21	ISSUED FOR REVIEW
0	6/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

RF
PLUMBING DIAGRAM

SHEET NUMBER

RF-2

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8 — F

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED–1–25A400/51K–SR4–120–PE–DDBTXD

CHAIN LINK FENCE — x — x — x — x

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W

UNDERGROUND POWER — UGP — UGP — UGP — UGP — UGP

UNDERGROUND TELCO — UGT — UGT — UGT — UGT — UGT

OVERHEAD POWER — OHP — OHP — OHP — OHP

OVERHEAD TELCO — OHT — OHT — OHT — OHT

UNDERGROUND TELCO/POWER — UGT/P — UGT/P — UGT/P — UGT/P

ABOVE GROUND POWER — AGP — AGP — AGP — AGP — AGP

ABOVE GROUND TELCO — AGT — AGT — AGT — AGT — AGT

ABOVE GROUND TELCO/POWER — AGT/P — AGT/P — AGT/P — AGT/P

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON–CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	UNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VIF	VERIFIED IN FIELD
W	WIDE
W/	WITH
WD	WOOD
WP	WEATHERPROOF
WT	WEIGHT

dish wireless.

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STATE OF CONNECTICUT — No. 27824 — LICENSED PROFESSIONAL ENGINEER

6/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
AN	SRB	MDW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER

149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH WIRELESS, LLC. AND TOWER OWNER NOC & THE DISH WIRELESS, LLC. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH WIRELESS, LLC. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH WIRELESS, LLC. AND DISH WIRELESS, LLC. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH WIRELESS, LLC. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH WIRELESS, LLC. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH WIRELESS, LLC. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH WIRELESS, LLC. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH WIRELESS, LLC. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH WIRELESS, LLC.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH WIRELESS, LLC. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

dish wireless.

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6/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
AN	SRB	MDW

RFDS REV #: 1.0

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A&E PROJECT NUMBER

149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH WIRELESS, LLC. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH WIRELESS, LLC.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

dish wireless.

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6/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
AN	SRB	MDW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	5/8/21	ISSUED FOR REVIEW
0	6/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149488.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00138A
128 R CREAMERY ROAD
DURHAM, CT 06422

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

dish wireless.

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SHEET TITLE

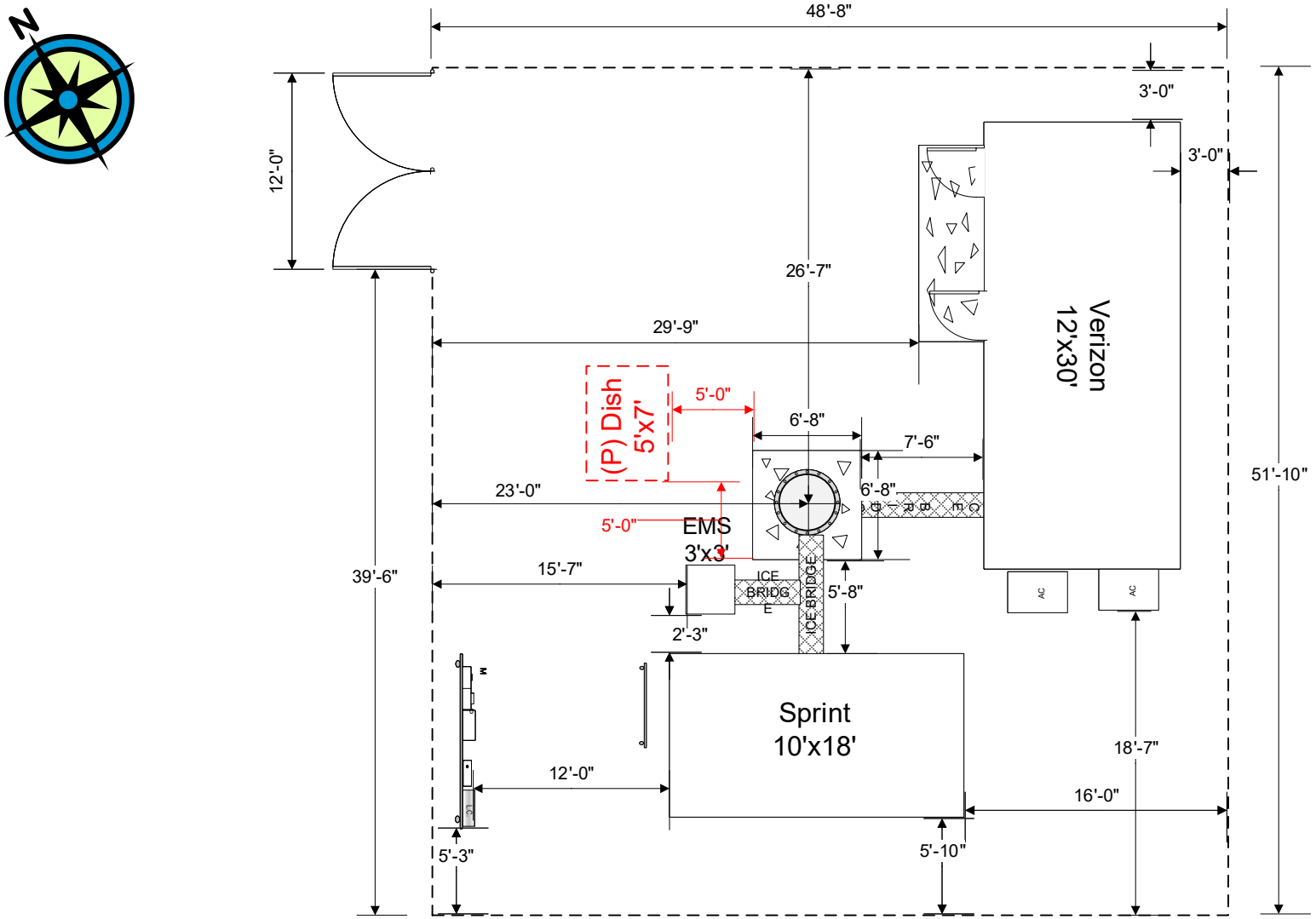
GENERAL NOTES

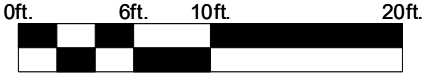
SHEET NUMBER

GN-4

EXHIBIT 11

Site Sketch (ground)





SBA Communications	S. Durham-Rt17/Lawson	
	COMPOUND DRAWING	
By: Stephen Roth sroth@sbasite.com	DATE: 4/7/2021	SITE NUMBER: CT46140-A STATE: CT